ARCADIA

CITY OF ARCADIA

STANDARD PLANS

Section 100 - 600	APWA Standard Plans For Public Works Construction (See "Greenbook")
Section 700	Water System Supplemental Standard Plans
Section 800	Streets and Lighting Supplemental Standard Plans

REVISED 12/03

SECTION 7. DOMESTIC WATER SYSTEM

7.1. GENERAL WATER SYSTEM CRITERIA

7.1.1. Standard Requirements. The design and construction of all domestic water system facilities to be operated and maintained by the City shall be in accordance with *City of Arcadia Water Standard Specifications and Standard Plans*; *AWWA Standards* by American Water Works Association, latest edition; *California Waterworks Standards* (Title 22, California Code of Regulations, Chapter 16); *Standard Specifications for Public Works Construction, (Greenbook)*, latest edition; as well as the guidelines and requirements of the Insurance Service Office, the City Fire Marshal, and the California Department of Forestry.

7.1.2. NPDES Requirements. The contractor is required to adhere to the provisions of the Federal Clean Water Act as regulated by the U.S. Environmental Protection Agency in Code 40, Code of Federal Regulations (CFR) Parts 122, 123, 124, the Porter-Cologne Act (California Water Code), the Waste Discharge Requirements for Municipal Storm Water Discharges within the County of Los Angeles and the City of Arcadia Municipal Code, Section 7810. Copies of suitable Best Management Practices (BMPs) from the *California Storm Water Best Management Practices Handbook for Construction Activities* are available from the Public Works Services Department – Water Section upon request.

7.1.3. Excavation Permit. Contractor shall obtain a Permit to Construct, Repair, and Remove Asphalt and Concrete ("Excavation Permit") from the City of Arcadia Public Works Services Department prior to start of work. It will be necessary to post a deposit based on the amount and type of work to be done.

7.1.4. Master Plan. All domestic water system design, including water demands, pressure zones and system elements, shall be in accordance with the City of Arcadia, *"Water Master Plan,"* 1996, and all other supplements and revisions thereto.

7.1.5. Looped Systems. Each project or development shall have at least two connections to waterlines in different streets to form a looped water system. Non-looped systems will be permitted only with the express permission of the City.

7.1.6. Design System Pressures. The following criteria shall be met for all domestic water systems unless otherwise approved or specified by the Engineer:

A. The design minimum residual pressure at any point in the system shall be 20 psi at maximum day plus design fire flow demands; however, the design minimum residual pressure near the location of a fire flow shall conform to the requirements of the City Fire Marshal.

B. Pressure regulators are required to be installed if the static pressure exceeds 80 psi at the meter. Pressure regulators shall be installed in front of the house on the riser.

7.2. WORK CONDITIONS

7.2.1. Work shall be scheduled between 7:00 a.m. and 4:00 p.m. unless prior approval is given by a Public Works Services Department – Water Section representative. No work shall be performed on weekends or holidays when the City Public Works Services Department is closed.

7.2.2. The City Public Works Inspector shall be notified at least two working days prior to the start of construction and any subsequent required inspection. Phone (626) 256-6685 or (626) 256-6650 to reach the Public Works Inspector.

7.2.3. A pre-construction conference with representatives from all affected agencies and the contractor shall be held on the job site at least 24 hours prior to the start of construction.

7.2.4. The contractor shall notify Underground Service Alert at (800) 227-2600 at least two (2) working days prior to commencement of excavation.

7.2.5. The contractor is required to contact Los Angeles County Department of Public Works (Flood Control Division) for compliance with their requirements for crossing storm drain pipes.

7.2.6. Residents in the project area shall be notified in writing 48 hours prior to start of work. The contractor shall ensure that residents can access their properties at all times.

7.2.7. All equipment and/or material shall be removed from the City right-of-way (street and parkway) by the end of each working day unless prior written approval is obtained fro the Public Works Services Director.

7.2.8. The contractor shall protect all substructures during excavation and boring operations including street light and traffic signal conduits, traffic detector loops, storm drain pipes, sewers, and all major utilities. Detector loops damaged as a result of construction shall be replaced in kind to the satisfaction of the Public Works Services Director.

7.2.9. Every effort shall be made to minimize damage to parkway landscaping. Parkway trees shall be circumvented. Restoration shall be made to the satisfaction of the Public Works Services Director.

7.2.10. The contractor shall be responsible for alleviating all dust and nuisance conditions occasioned by his work.

7.2.11. Existing improvements damaged during construction shall be repaired immediately and to the satisfaction of the Public Works Services Department Director.

7.2.12. No trenches or potholes shall remain open by the end of the working day. All trenches and potholes shall be protected safely at all times.

7.2.13. At the end of each working day, the entire trench and/or pothole area and adjacent streets shall be swept and cleaned to the satisfaction of the Public Works Services Director.

7.2.14. The contractor shall be responsible for furnishing an adequate supply of water for required use. The contractor shall not use water from any fire hydrant without first obtaining a "no fee" Fire Hydrant Permit from the Public Works Services Department – Water Section, providing a deposit, and installing a meter loaned by the City. The contractor shall pay for the water used.

7.3. TRAFFIC CONTROL

7.3.1. At least one traffic lane shall be maintained in each direction at all times. All temporary traffic lanes shall be a minimum of 10 feet in width. In addition, lane clearances shall be a minimum of five (5) feet from an open excavation and two (2) feet from a curb or other vertical obstruction.

7.3.2. Safe ingress and egress to residences and/or businesses along the work location shall be maintained at all times.

7.3.3. Toe boards shall be used on the traffic and/or pedestrian side of the spoil at the discretion of the Public Works Services Director.

7.3.4. Where conditions warrant restriction of parking, "No Parking" signs shall be posted 24 hours prior to such requirement and the Police Department shall be notified of such posting. The contractor shall maintain a record of posting such notices.

7.4. TRAFFIC CONTROL DEVICES

7.4.1. All traffic control devices shall conform to the latest editions of the *Work Area Traffic Control Handbook*, American Public Works Association and the *State of California Manual of Traffic Controls*, California Department of Transportation.

7.4.2. The contractor shall maintain traffic control devices throughout the construction period. Signs shall be removed immediately after the work is completed.

7.4.3. Advance warning signs shall be located on the right-hand side of the traffic lanes.

7.5. BUSINESS LICENSE AND LIABILITY INSURANCE

7.5.1. Contractor and all subcontractors are required to be properly insured and to obtain a City of Arcadia Business License (Arcadia Municipal Code Section 6211).

7.5.2. Contractor shall have a "Class A" General Engineering Contractor's license issued by the California Contractor's State License Board.

7.6. IMPROVEMENT PLANS

7.6.1. Improvement plans shall be submitted to the Public Works Services Department in paper copy and digital format.

7.6.2. Substantiating engineering calculations for demands and pressures, using the attached calculation sheet, shall accompany plan submittals.

7.6.3. Improvement plans shall be prepared in accordance with the following:

A. Show profiles of water mains 12 inches in diameter and larger.

B. Provide detailed quantity estimates indicating linear footage of pipe by size, class and type; number of valves by size, class and type; number of fire hydrants; number of water services by size; number of blowoffs and air and vacuum valve assemblies; linear footage of concrete encasements (if applicable); and any other appurtenances which should be identified for quantity purposes.

C. List all applicable construction notes on each sheet. Standard domestic water system notes include, but are not limited to, the following:

WATER STANDARD SPECIFICATIONS

1) The water system shown on these plans shall be constructed by the Developer. All design and construction to be in accordance with City of Arcadia Water Standard Specifications and Standard Plans; American Water Works Association (AWWA) Standards; and Greenbook 2000. The Contractor shall have a copy of each of these standards, as well as a copy of the project plans and specifications, on the job at all times.

2) The Developer shall furnish the City with recorded easements for all portions of the water system outside the public right-of-way.

3) The City shall be furnished with six copies of approved construction plans prior to the start of construction.

4) The contractor shall obtain all City and/or County permits prior to the start of construction.

5) Water mains shall be staked for line and grade or shall be installed subsequent to the installation of the curbs but prior to paving of the streets. The minimum cover over domestic water mains shall be 42 inches below pavement finished grade.

6) No valve shall be located within a gutter or other concrete drainage device.

7) All fire hydrants shall be installed per the Public Works Services Department - Water Section's **Standard Plan No. 706** and shall have a concrete pad placed around them.

8) **No facility is to be backfilled until inspected by the City.**

9) Shut down of existing water lines to facilitate connection to existing facilities shall be coordinated with the Public Works Inspector and conducted exclusively by City crews. No connections to the City's existing water system shall be made until the new facilities have been successfully tested and disinfected. All connections to the City's water system shall be made in the presence of the Public Works Services Department - Water Section's Public Works Inspector and/or other designee

10) Water house connection laterals shall be installed behind the curb prior to paving of the street. The services shall be extended to their final location by the Developer at a time prior to pressure testing of the water system.

11) Separation of water mains and sewers shall be per the Public Works Services Department - Water Section's Standard Plan Number 701.

12) All water services supplied with pressure greater than 80 psig shall be provided with approved pressure regulators set at less than 80 psig.

13) Meter boxes shall be installed directly behind the curb whether sidewalk is directly behind the curb or not. Meter boxes installed behind rolled curb shall have traffic lids. No meter boxes shall be permitted within driveways.

14) Valves shall be installed per the Public Works Services Department - Water Section's Standard Plan Number 716. The Developer shall raise all valve boxes to the finished pavement grade upon completion of the pavement. If the surface course of pavement is not completed within a reasonable amount of time after the base course of pavement is completed, the Developer shall raise the valve boxes to the finished grade of the base course so that the City may operate the valves. The Developer shall then raise all valve boxes to final finished grade of the pavement upon completion of the surface course of pavement.

D. All drafting to use standard symbols, legends and abbreviations.

E. Show north arrow and graphic scale. Scale is to be 1" = 20', or 1" = 40' with approval of the Public Works Services Department Director.

F. Show all street centerline bearings.

G. Show all street centerline and water main curve data in tabulated form.

H. Reference all other sheets for same reach and for details.

I. All stationing will run along street centerline. All stationing will run left to right, south to north, or west to east.

J. Reference street or survey stationing at all centerline intersections, B.C.'s and E.C.'s.

K. Show stations of all water main intersections, junctions, angle points, B.C.'s and E.C.'s.

L. Show match line station and sheet number.

M. Show all utility lines pertinent to water main construction. Label utilities per City of Arcadia standards.

N. Show all street and water main dimensions.

O. Show all parkway topography.

P. Station all water services, fire hydrants and any other connections to water.

Q. Exact fire hydrant locations to be set by City Public Works Services Department Director.

R. Hot tap on existing water main shall be minimum one size less than existing water main size, except with prior approval of City Public Works Services Director.

S. Reference existing water plans by Plan number.

T. Minimum depth of water main shall be 42".

U. List all plan numbers used for reference.

V. All sheets to be signed, stamped and dated by a registered Civil Engineer with License expiration date.

W. Show plan description, street name and sheet limits.

X. Plan number to be assigned by City.

Y. Fire hydrant numbers to be assigned by City.

7.7. WATER SERVICES

Water services shall be installed in accordance with the City's Standard Plans and the following requirements:

A. All service lines shall be 2-inch copper tubing, or 4-inch or 6-inch ductile iron pipe manifold.

B. The minimum service line size to the meter shall be 2" in diameter, unless a smaller size is approved by the Public Works Services Department Director as part of a manifold installation.

C. Special designs are required to be submitted for approval of the Public Works Services Department Director for commercial, irrigation, or industrial services

to which the City's Water Standard Specifications and/or Standard Plans are not applicable.

D. No water meter shall be located in an area or location which is not easily accessible to the City at all times.

E. All water service lines with a long side lead shall be installed by boring rather than trenching. Trenching is allowed for placing water service lines with short side leads except boring is required under existing curbs and gutters, cross gutters and sidewalks unless otherwise approved by the Public Works Services Department Director.

F. After the new service, including water meter and box, is installed, contractor will abandon the old service at the main pipeline by closing the Corporation Stop Valve and cutting and removing a section of the old service line.

7.8. WATER MAINS

7.8.1. General. Water mains shall be installed per the Public Works Services Department - Water Section's Standard Plan Number 700 and "AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances," AWWA C600-93.

7.8.2. Hot Tap Inspections. No connections to the City's existing water system shall be made without the presence of the Public Works Services Department - Water Section's Water Quality/Backflow Inspector and/or Public Works Inspector.

7.8.3. Sizes of Mains. The normal minimum size transmission main shall be 12 inches in diameter. The normal minimum size distribution main shall be 8 inches in diameter. No 10-inch or 14-inch diameter mains will be allowed without specific approval of the Engineer. Unless otherwise specified herein or approved by the Engineer, all water mains shall be looped. Transmission mains shall normally be sized based on a headloss of 3 feet or less per 1000 linear feet of pipe, and in no case shall the design headloss exceed 5 feet per 1000 linear feet of pipe unless specifically approved by the Engineer. For distribution mains, the maximum allowable design velocity shall be 8 feet per second.

On dead-end streets, the minimum size main shall be 8 inches to at least the last fire hydrant. On dead-end streets serving the equivalent of 25 or fewer normally-sized residential lots, looping of the water main will not be required; however, the water main shall be extended beyond the last fire hydrant with a minimum 4-inch diameter line, which shall terminate with a blow-off conforming to the Public Works Services Department - Water Section's Standard Plans. If the water main is looped to an adjacent street,

the water main shall be a minimum of 8 inches in diameter, extending through an easement, and valved at each end of the easement within the street pavement.

All water mains 12" in diameter and larger shall have a profile shown on the improvement plans.

7.8.4. Pressure Testing of New Water Mains. A water pressure test to check for leakage shall be performed on a completed water main pipeline prior to final disinfection. The mainline and hydrant laterals shall be tested at 225 pounds per square inch (psi). The pressure shall be held for at least four (4) hours. The allowable leakage shall not exceed that specified in AWWA Standard C600.

When leakage exceeds the amount allowed by these specifications, the contractor at his expense shall locate the leaks and make the necessary repairs or replacements to reduce the leakage to the specified limits. Any individually detectable leaks shall be repaired, regardless of the results of the tests.

7.8.5. Disinfection of New and Repaired Water Mains. All new water mains shall be disinfected and bacteriologically tested before they are placed in service and before making a physical connection to an existing mainline. All water mains taken out of service for inspection, repair, or other activities that might lead to contamination of water shall be disinfected and tested before they are returned to service.

Disinfection and bacteriological testing shall be performed according to AWWA Standard C651 and the City's Standard Plan No. 700. The continuous feed method with chlorine gas shall be used for disinfection. The free chlorine concentration in the main after initial dosing shall not be less that 50 mg/l. The chlorinated water shall be retained in the main for at least 24 hours, during which time all valves and hydrants in the treated section shall be operated to ensure disinfection of the appurtenances. At the end of this 24-hour period, the treated water in all portions of the main shall have a residual of not less than 25 mg/l.

The City's Water Quality Backflow Inspector will verify that the specified residual exists in the main after 24 hours. In the event that the residual at the end of the 24-hr. retention period is less than the amount allowed by these specifications, at the City Inspector's discretion, the City may determine that the contractor has to rechlorinate the line at his own expense.

After the specified residual has been demonstrated, the contractor shall dechlorinate the water in the main using sodium thiosulfate. Water from

the main cannot be discharged to the street, gutter, or any area leading to a storm drain unless the water has first been dechlorinated to 0.5 mg/l free residual chlorine or less.

For short reaches of pipe where the continuous feed method is not practical, the contractor may use the calcium hypochorite tablet method as per AWWA Standard No. C651.

7.9. CONSTRUCTION and RESURFACING DETAILS

7.9.1. General. Earthwork, trenching, subgrade preparation, preparation of base materials, backfill, densification, compaction, and resurfacing shall be performed according to Greenbook 2000 and these City of Arcadia Water Standard Plans and Specifications, including the following details:

7.9.2. Pothole dimensions shall be a minimum of 3' by 3' to allow proper compaction and prevent damage to existing asphalt concrete in good condition.

7.9.3. Asphalt concrete pavement shall be saw cut a minimum of 75% of total depth. The limit of concrete removal and replacement shall be determined in the field by the City's Public Works Inspector prior to construction.

7.9.4. One-sack cement slurry backfill shall be used in tunneled areas under concrete pavement, drive apron or curb and gutter.

7.9.5. Compaction test to be performed by City at contractor's expense or by private soils consultant retained by consultant and approved by City. Copies of test results shall be given to City by contractor for approval before final acceptance of work.

7.9.6. Untreated base for pavement, curb, gutter, and similar types of improvements shall be crushed aggregate base.

7.9.7. Asphalt concrete pavement shall consist of a minimum of two courses: A 1" thick minimum finish course of D1-PG-64-10 (3/8" aggregate size) and a base course of B-PG-64-10 (3/4" aggregate size). The base course shall be 1" deeper than the existing asphalt concrete pavement.

7.9.8. When using portland cement concrete class 660-B-4200 (maximum 3"– 4" slump), there shall be a minimum curing time of 48 hours before traffic is allowed. When using portland cement concrete class 520-A-2500 (maximum 3" slump), the minimum curing time shall be 7 days before traffic is allowed. Contractor shall install No. 5 steel tie bars 24" long embedded 12" into existing concrete at 30" on center. Tie bars shall be installed along each side of new concrete panel utilizing epoxy grout.

7.9.9. The contractor shall provide the Public Works Inspector with a ticket for the asphalt concrete and/or portland cement concrete being constructed.

7.9.10. **All permanent resurfacing within City right-of-way shall be completed within ten (10) days from the date of temporary resurfacing. Failure to complete permanent resurfacing will cause the City to compete the work at contractor's expense.**

7.9.11. **Contractor shall notify the City's Public Works Inspector 24 hours prior to construction of permanent paving at (626) 256-6685 or (626) 256-6650. The contractor shall provide the City Public Works Inspector with a ticket for the asphalt cement and/or P.C.C. being constructed.**

7.9.12. If the street area being permanently resurfaced has been slurry sealed within the last 5 years as part of the City's Annual Slurry Seal Program, the street cut area shall be slurry sealed by the contractor after permanent paving is completed. The area to be slurry sealed and type of slurry seal shall be determined the Public Works Inspector.

7.10. PIPE APPURTENANCES

7.10.1. Thrust and Anchor Blocks. Thrust blocks and anchor blocks shall be as shown on **Standard Plan Number 710** or as directed by the Public Works Services Director or his appointed representative.

7.11. WATER VALVES

7.11.1. General. Valves shall be installed per the Public Works Services Department - Water Section's **Standard Plans Number 716 and 717** and American Water Works Association (AWWA) Standards.

7.11.2. Type of Valves. All main line water valves shall be resilient-seated gate valves, unless otherwise specified by the Public Works Services Director. Gate valves shall conform to the "AWWA Standard for Resilient-Seated Gate Valves for Water Supply Service" ANSI/AWWA C509-94. Valve ends shall be flanged or mechanical-joint as shown on the drawings. Flanges shall be 125-1b., AWWA/ANSI C110/A21.10 or ANSI B16.1. Mechanical joints shall conform to the "Standard for Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings" AWWA C111/A21.11. Mechanical-joint bolts, glands and gaskets shall be supplied by the valve manufacturer. Approved valve types are specified in the City's "List of Approved Materials" and/or on the City's Standard Plans.

7.11.3. Location of Valves. There shall be at least three gate valves at the 3-way intersection of any water mains; at least four gate valves at the 4-way intersection of any water mains; and four gate valves at any 4-way intersection of major distribution mains. All fire hydrant laterals shall have a control valve. The control valves at all intersections as described herein shall be flanged to the main line tee or cross unless otherwise approved by the Public Works Services Director. Valves on distribution mains shall be spaced a maximum of 1000 feet apart so that no more than three fire hydrants would be taken out of service at any one time. Unless specifically approved by the Public Works Services Director, the maximum allowable spacing for intermediate valves on transmission mains is 1,200 feet. All intermediate main line valves should be located on the prolongation of a property line wherever possible.

Where water mains are located within an easement outside of paved streets, a valve shall be located at each end of the easement within the street section.

In no event shall any valve be installed within a gutter or other concrete drainage device.

Valve stem tops having over 48 inches of cover shall be provided with an approved extension.

The final determination of the locations of all valves shall be subject to the approval of the Public Works Services Department – Water Section.

7.11.4. Blow-offs and Air and Vacuum Valves. Blow-offs (flush-outs) shall be installed at any point along the main where either the flow velocity or the slope of the main could cause sediment to settle. Blow-offs shall normally be installed at all low points in transmission mains and the ends of dead-end streets or cul-de-sacs (unless a fire hydrant is available for flushing). Blow-offs shall be installed at any other location specified by the Public Works Services Department – Water Section to assure the capability of complete flushing of a main. Air and vacuum valves shall be installed at all high points in mains larger than 8 inches in diameter.

7.12. FIRE HYDRANTS

Fire hydrants shall be installed in accordance with the City's Standard Plan No. 706 and the following requirements:

A. Types. All fire hydrant assemblies shall be wet barrel, of the types and configuration specified in the City's Standard Plan No. 706 and "List of Approved Materials."

B. Location. Locations of fire hydrants shall be to the satisfaction of the City Fire Marshal, shall be accessible at all times, and shall conform to the following criteria:

a. On distribution mains rather than transmission mains unless otherwise specified or approved by the Public Works Services Director.

b. On the larger main at the intersection of two mains.

c. On the side of the main nearer to the street right-of-way line.

d. At the street intersection rather than in the cul-de-sac for cul-de-sacs less than 200 feet in length.

e. On the beginning of the curb return (BCR) at intersections.

f. On the prolongation of a lot line, but a minimum of 3 feet from the edge of any driveway, light standard, underground utility vaults or other similar obstructions.

g. A minimum horizontal clearance of 24" from the face of curb, with the 4" pumper outlet perpendicular to the curb face.

h. A minimum horizontal and vertical clearance of 24" around operating nuts and protective caps, with the hydrant flange mounted at least 4" above finished grade.

i. Any hydrant located behind the sidewalk shall be set in a 3' x 3' concrete pad.

C. Spacing. The required spacing of all fire hydrants shall be subject to the approval of the City Fire Marshal. The following guidelines for maximum spacing of hydrants are presented for normal installations:

a. Residential areas - 300 feet, but not more than 120,000 square feet per hydrant.

b. Commercial and industrial areas - 300 feet, but not more than 90,000 square feet per hydrant. Private on-site hydrants may be included as part of the approved system in order to meet area requirements, provided they meet the requirements of the City Fire Marshal and the Uniform Fire Code.

D. All onsite fire hydrants and fire protection supply mains for commercial/industrial developments shall be private and shall be owned, operated and maintained by the property owner.

7.13. BACKFLOW PREVENTION DEVICES

7.13.1. Only backflow prevention devices which are approved by the University of Southern California Foundation for Cross Connection Control and Hydraulic Research shall be used. For questions, contact the Public Works Services Department - Water Section's Water Quality/Backflow Inspector at (626) 256-6592.

7.13.2. Backflow prevention devices shall be installed as shown on Standard Plan No. **712 (Reduced Pressure Principle Type), 714 (Double Check Detector Assembly) or 713 (Double Check Valve Assembly).**

7.13.3. Any industrial or commercial irrigation system shall be connected to the City's domestic water system through an approved backflow prevention device. A reduced pressure principle type of device shall be used unless otherwise specified by Title 17, California Code of Regulations, "Public Health."

7.13.4. Each private fire protection system shall be connected to the City's domestic water system through an approved backflow prevention device in conformance with National Fire Protection Association (NFPA) standards. A double check valve assembly type shall be used for low-hazard residential applications (NFPA Standard 13D) and a double check detector assembly type shall be used for commercial/industrial applications (NFPA Standard 13), unless otherwise specified by Title 17, California Code of Regulations, "Public Health" or NFPA standards.

7.14. INSPECTION OF WORK

7.14.1. General. All work shall be left open and uncovered until inspected and approved by the Public Works Services Department – Water Section's Public Works Inspector and/or other designee. The contractor shall not proceed with any subsequent phase of work until the previous phase has been inspected and approved. No work requiring same-day inspection shall be performed on alternate Fridays (check with City for closed Fridays.)

7.14.2. Inspection and approval shall be obtained during and/or at the completion of the following portions of work, as determined by the Public Works Services Department – Water Section:

A. Trench excavation and pipe bedding installation

B. Hot tap

C. Placing pipe, fittings and structures, including identification tape, on nondomestic water main and service lines

D. Placing of all concrete anchors and thrust blocks

E. Placing and compacting the pipe zone backfill

F. Backfilling balance of trench to grade (Compaction test to be performed by City at contractor's expense or by private soils consultant retained by consultant and approved by City. Copies of test results shall be given to City by contractor for approval before final acceptance of work.)

G. Pressure testing of all mains and services

H. Disinfecting and flushing of pipelines

I. Repaving trench cuts

J. Raising valve box covers to finished grade

K. Installation of service lines, meter boxes, water meters, and backflow prevention devices.

7.14.3. Final Water Facilities Inspection. Before final acceptance, the Public Works Inspector, accompanied by a representative from the Public Works Services Department - Water Section and the contractor's superintendent or foreman, will make a final inspection of all work to check particularly on the following items:

A. That all phases of the job are completed in accordance with plans and specifications.

B. That all valve boxes are raised to finish grade and that all repatching is completed.

D. That all valves are referenced out and the Public Works Inspector has been given all reference measurements.

E. That all right-angle meter stops and meters are properly positioned and that all meter boxes are positioned and raised to proper grade.

F. That fire hydrants are raised to proper grade, in a vertical position, painted, and that the concrete pad is placed properly.

G. That backfill has passed all compaction requirements.

H. That all system valves are turned and left open (except those specifically required to be normally closed), and that the turns required for complete open/close cycle are recorded on the record drawings.

I. That all waterlines have been chlorinated and disinfected.

J. That all line pressure testing and flushing has been completed.

K. That the job site is clean and that all of the contractor's equipment and materials are removed.

L. That backflow prevention devices are properly installed.

M. That all survey monuments, centerline ties and survey reference points have been protected in place or re-established where disturbed in accordance with Section 8771 of the Land Surveyors Act.

End of Section

City of Arcadia

Section 7 – Domestic Water System
LIST OF APPROVED MATERIALS
Revised 1/9/07

	Description	Manufacturer's Stock No. or Size
1-Inch Meter Installation		
	(Size of Main) x 1" Double Strap Saddle with CC Pipe Thread	Ford F-202 or Smith Blair 313 Romac
	1-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller B25008 Ford FB 1000-4-Q or Jones J-1937SG
	1-inch Angle Ball Meter Valve (CTS Compression Inlet by Meter Swivel Nut Outlet)	Mueller B24258 Ford BA 43-444W-Q or Jones J-1963WSG
	Meter - MJ09-2MD-AAA-2 or BL09-2MD-AAA-2, Programmed to Utility Code #83	Master Meter
	Meter Coupling (Iron Pipe Thread by Meter Swivel Nut with washers)	Ford C38-44-3.5 or Jones J-130x1"
	1-inch Brass Ball Valve	Mueller ,Ford , or Jones
	Meter Box 11" x 21" x 12"	Armorcast P6001863
	Meter Box Cover with Hinged Lid	Armorcast A6001865R
	Type "K" Soft Copper Tubing	1"
1 ½ -Inch Meter Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Ford F-202, Smith Blair 313, Romac, or Mueller DR2A
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller B25008, Ford FB 1000-7-Q,or Jones J-1937SG
	Type "K" Soft Copper Tubing	2"
	90^0 Slp x Slp Elbow	2"
	1 ½ -inch Angle Ball Meter Valve (CTS Compression Inlet by Meter Flange Outlet)	Mueller B24276, Ford BFA43-777W-Q, Jones J-1975WSG
	1 ½ -inch Brass Ball Valve	Mueller, Ford, or Jones
	FLG x MIP Bronze Meter Flange	Mueller, Ford, or Jones
	Meter – MJ11-2MD-AAA-2, Programmed to Utility Code #83	Master Meter

	Description	Manufacturer's Stock No. or Size
	Meter Box	Armorcast P6001534x12
	Meter Box Cover	Armorcast A6001643DZ
	Meter Read Cover	Armorcast A6000482 Logo: "WATER"
2-Inch Meter Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Mueller DR2A, Ford F-202, Smith Blair 313, or Romac
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller 25008, Ford FB 1000-7-Q, or Jones J-1937SG
	Type "K" Soft Copper Tubing	2"
	90^0 Slp x Slp Elbow	2"
	Angle Ball Meter Valve (CTS Compression Inlet by Meter Flange Outlet)	Mueller B24276, Ford BFA43-777W-Q, or Jones J-1975WSG
	Meter – MJ13-2MD-AAA-2, Programmed to Utility Code #83	Master Meter
	Meter Box	Armorcast P6001534x12
	Meter Box Cover	Armorcast A6001643DZ
	Meter Read Cover	Armorcast A6000482 Logo: "WATER"
	2" Brass Ball Valve	Mueller, Ford, or Jones
	FLG x MIP Bronze Meter Flange	Mueller, Ford, or Jones
3-Inch Compound Meter Installation		
	(Size of Main) x 4" MJ x FE Ductile Iron Tee or (Size of Main) x 4" MJ x FE Tapping Sleeve	Smith Blair, Romac, Ford, Mueller
	4" MJ x FE R/W Gate Valve or 4" MJ x FE Tapping Valve, RW Epoxy Coated – 8 ml	Clow, Kennedy, or American Flow Control
	4" MJ Retaining Gland with Set Screws	Romac or Grip Tite
	4" Ductile Iron Pipe	Class 52 or Pressure Cl. 350 U.S or Pacific States Pipe
	4" x 18" MJ Offset or MJ /PE	DIP or Galv. Iron Pipe, Cl. 250
	4" x 16" FE x PE Adapter	DIP or Galv. Iron Pipe, CL. 250

	Description	Manufacturer's Stock No. or Size
	4" x 3" Compression Reducing Flange	
	3" Nipple	Brass
	3" x 1" Tee	Brass 2308 TE
	3" Ball Valve	Apollo or equal domestic brand
	3" x 12" Nipple (Cut to fit flex Cplg.)	Brass
	3" Flex Coupling	1223 CO
	3" Flange (4 hole)	DIP or Galv. Iron Pipe, Cl. 250
	3" DC14-2BM-AJA-2 w/(2) - 199 004 45 3GDS Clip On Tranceivers, Programmed to Utility Code #83	Master Meter
	3" Threaded Flange	
	1" Sweat Nipple	Copper
	1" 90^0 Slp x Slp Elbow	Copper
	1" Straight Meter Coupling (Compression x Male Thread)	
	1" Straight Curb Stop (Copper Both Ends)	Ford B22-444
	Type "K" Copper Tubing	1"
	Concrete Meter Vault (3'-0" x 5'-0" inside)	Brooks Vault #736
	6" Valve Cap	Cast Iron
	6" Dia. Valve Can	PVC sch 80, or Blue Brut (Cut to Fit), 14-guage Galv. Steel
	6" Dia. X 18" Valve Sleeve, Slip Can	14-gauge Galv. Steel

	Description	Manufacturer's Stock No. or Size
6"Fire Hydrant Installation		
	6" x 4" x 2 ½" Hydrant (Residential) 6" x 4" x 4" x 2 ½" Hydrant (Commercial)	Jones J-3710R Jones-3775R or Clow 2050R Clow 2065R
	Break Off Bolts	Set of 8
	6" Ductile Iron Pipe	Cl 52, or 350 Pressure Cl. 250
	Retaining Glands with Set Screws	Romac
	(Size of Main) x 6" MJ x FE Ductile Iron Tee or (Size of Main) x 6" MJ x FE Tapping Sleeve	Smith Blair, Romac, Ford, Mueller
	6" MJ x FE R/W Gate Valve or 6" MJ x FE Tapping Valve	C504-450 or Clow , Kennedy, or American Flow Control
	4" and 2 ½" Outlet Caps	Orange Plastic
	6" FE Spool	8 Hole

	Description	Manufacturer's Stock No. or Size
	6" Valve Cap	Cast Iron
	6" Dia. Valve Can	PVC sch 80, or Blue Brut (Cut to Fit), 14-gauge Galv. Steel
	6" Dia. X 18" Valve Sleeve, Slip Can	14-gauge Galv. Steel
	(Size of Main) x 1" Double Strap Saddle with Iron Pipe Thread	Ford F-202 or Smith Blair 313 or Romac
2-Inch Air Release and Air Vacuum Valve Installation		
	(Size of Main) x 2" Double Strap Saddle with CC Pipe Thread	Mueller DR2A, Ford F-202, Smith Blair 313, or Romac
	2-inch Corporation Stop (CC Pipe Thread Inlet by CTS Compression Outlet)	Mueller 25008, Ford FB 1000-7-Q, or Jones J-1937SG
	Type "K" Soft Copper Tubing	2"
	Combination Air Release and Air Vacuum Release Valve	2" Apco 145C 2" Valmatic 202C.2
	Brass Close Nipple	2"
	Brass Gate Valve	2"
	Brass Nipple	2" x 18"
	Concrete Pad, Poured in Place	8" th. x 24" x 24"
	90^0 Copper Bend, Fitted with Screen	2"
	Steel Can Anchors	1" x ¼" Steel Stock with ½" x 2" Machine Nuts & Bolts
	Steel AR & AV Can Cover	Size to fit

Notes: 1) All materials, including water meters and meter boxes, will be supplied by contractor.

City of Arcadia – List of Standard Plans

Section 7 – Domestic Water System

The City of Arcadia has adopted the following Standard Plans for water system design and installation:

General

Water Design and Installation Criteria	700
Water Main and Sewer Separation Requirements	701
Trench Detail	702
Pipe Support	703

Water Meters

1-1/2" & 2" Service Connections	704
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Fire Hydrants

6" Fire Hydrant Installation	706

Auxiliaries

2" Vacuum and Air Release Valve Assembly	707
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Thrust and Anchor Blocks	710
Construction – Demolition Standpipe Installation	711

Water Services

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Backflow Prevention Device – Double Check Valve Assembly	713
Backflow Prevention Device – Double Check Detector Assembly	714

Valve

Standard Valve Installation	716
Gate Valve Installation	717
Valve Cover Assembly and Valve Stem Extension	718

MATERIALS:

I. MAINLINE PIPE:

A. DUCTILE IRON PIPE, CLASS 52
1. A.W.W.A. STANDARDS NO. C115, C150 AND C151

B. CEMENT MORTAR LINING
1. A.W.W.A. STANDARD NO. C104

△1

II. MAINLINE FITTINGS:

A. DUCTILE IRON COMPACT FITTINGS
1. A.W.W.A. STANDARD NO. C153

B. DUCTILE IRON, CLASS 250
1. A.W.W.A. STANDARD NO. C110

C. CEMENT MORTAR LINING
1. A.W.W.A. STANDARD NO. C104

△1

III. MAINLINE PIPE AND FITTING JOINTS:

A. RUBBER GASKET PUSH ON JOINTS (B.J.)
1. A.W.W.A. STANDARD NO. C111
2. "TYTON" BY CLOW CORPORATION OR
3. "TYTON" U.S. PIPE AND FOUNDRY CO. OR EQUAL
4. EXCEPT AS SHOWN ON STANDARD PLANS

B. MECHANICAL JOINT (M.J.)
1. A.W.W.A. STANDARD C111
2. MAY BE SUBSTITUTED WITH APPROVAL OF THE PWS WATER ENGINEER
3. AND AS SHOWN ON STANDARD PLANS
4. STEEL NUTS AND BOLTS
   a. HIGH STRENGTH
   b. LOW ALLOY

C. FLANGED JOINTS (F.J.)
1. A.W.W.A. STANDARD C111 & C115
2. WHERE SHOWN ON STANDARD PLANS
3. FLAT FACED

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4. 125 POUND AMERICAN STANDARD DIMENSIONS
   a. 175 P.S.I. OR LESS WATER WORKING PRESSURE
5. 150 POUND AMERICAN STANDARD DIMENSIONS
   a. WATER WORKING PRESSURE GREATER THAN 175 P.S.I.
6. BOLTS USED WITH FLANGES SHALL EXTEND TO BE FLUSH WITH NUTS OR HAVE 2 TO 3 THREADS EXPOSED

D. RESTRAINED JOINTS (R.J.)
1. A.W.W.A. STANDARDS NO. C111
2. WHEN APPROVED BY PWS WATER ENGINEER
3. EXCEPT AS SHOWN ON STANDARD PLANS
4. "TR-FLEX" BY U.S. PIPE AND FOUNDRY OR
5. "SUPER-LOCK BY CLOW CORPORATION OR EQUAL
6. GRIP RING TYPE ROMAC

I. SERVICE LATERALS: 4" MINIMUM AND LARGER:
A. PIPE
1. PER SECTION I OF THIS STANDARD
B. FITTINGS
1. PER SECTION II OF THIS STANDARD
C. JOINTS
1. PER SECTION III OF THIS STANDARD

II. SERVICE LATERALS: 1" AND 2":

A. COPPER TUBING
1. SEAMLESS WATER TUBE, TYPE K (SOFT)
2. A.W.W.A. STANDARD NO. C800
B. BRAZED JOINTS
1. USE ONLY 15% SILVER BRAZING FILLER METAL (SOLDER), EITHER STAY-SILV 15 OR APPROVED EQUAL.
2. USE OXYACETYLENE GAS FOR BRAZING TO ACHIEVE BRAZING TEMPERATURE OF 1480 DEG. F OR GREATER.

III. COUPLINGS AND REPAIR SLEEVES: 3" AND LARGER:

A. STEEL OR STAINLESS STEEL
1. BY SMITH-BLAIR
2. BY ROMAC
3. BY FORD OR EQUAL

IV. COUPLINGS: 1" OR 2":
A. CAST BRONZE OR FORGED BRASS
1. A.W.W.A. STANDARD NO. C800
2. CONTAINING 85 PERCENT COPPER
3. BY THE FORD METER BOX CO. OR
4. BY JAMES JONES CO. OR
5. BY MUELLER CO. OR EQUAL

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V. SERVICE LATERALS: 1" AND 2":

A. COPPER TUBING
1. SEAMLESS WATER TUBE, TYPE K (SOFT)
2. A.W.W.A. STANDARD NO. C800

VIII: NUTS AND BOLTS:

A. TYPE 326 STAINLESS STEEL
1. EXCEPT ON MECHANICAL JOINTS

B. PROTECTIVE COATING (BURIED NUTS AND BOLTS)
1. 20 MILS DRY FILM THICKNESS
a. BY 3M CORPORATION "EC-244" OR
b. BY KOPPERS, INC "BITUMASTIC 50" OR EQUAL

IX. VALVES:

A. GATE VALVE
1. A.W.W.A. STANDARD NO. C515
2. RESILIENT SEATED, N.R.S.
3. 200 P.S.I . MINIMUM WORKING PRESSURE
4. TYPE 316 STAINLESS STEEL BODY BOLTS
5. TWO INCH (2") SQUARE OPERATING NUT
6. COUNTERCLOCKWISE OPENING
7. HANDWHEEL WHERE SHOWN ON STANDARD PLANS
8. MECHANICAL JOINT PER SECTION III, B
9. FLANGED JOINT PER SECTION III, C
a. ONLY WHERE SHOWN ON STANDARD PLANS
10. MECHANICAL JOINT X FLANGE
a. CLOW
b. AMERICAN FLOW CONTROL - AFC 2500
c. KENNEDY--RWGV-93
11. MECHANICAL JOINT BOTH ENDS
a. CLOW
b. AMERICAN FLOW CONTROL - AFC 2500
c. KENNEDY--RWGV-93
12. MANUFACTURERS STANDARD FUSION BONDED EPOXY INTERIOR AND EXTERIOR, 8 MIL MINIMUM THICKNESS.

B. MINOR VALVES (2" AND SMALLER SIZE)
1. A.W.W.A. STANDARD NO. C800
2. CAST BRONZE OR FORGED BRASS
a. BY FORD METER BOX CO. OR
b. BY JAMES JONES CO. OR EQUAL

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C. BUTTERFLY VALVES
   1. AWWA STD. C504 △1
   2. RUBBER SEATED
   3. MANUFACTURER EPOXY COATED
   4. END CONNECTION MJ, MJ/FLG
   5. H.J. PRATT, MUELLER OR APPROVE EQUAL

X. TAPPING SLEEVES:

A. SPLIT SLEEVE

B. MECHANICAL JOINT BY FLANGED SPUR

C. STEEL NUTS AND BOLTS
   1. HIGH STRENGTH
   2. LOW ALLOY

D. 200 P.S.I. MINIMUM WORKING PRESSURE

E. MANUFACTURED BY:
   1. SMITH-BLAIR OR ROMAC
   2. FORD OR EQUAL

XI. METERS: △1

A. DEVELOPER PROJECTS
   1. CONTRACT SHALL FURNISH AND INSTALL ALL WATER METERS AND WATER METER BOXES.

B. CITY PROJECTS
   1. FURNISHING OF ALL METERS AND WATER METER BOXES SHALL BE DEFINED IN THE PROJECT DRAWING AND SPECIFICATION. ASSOCIATED COST SHALL BE DEFINED IN THE BID SCHEDULE OF CONTRACT DOCUMENT.

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INSTALLATION:

I. PIPE, VALVES, FITTINGS, AND APPURTENANCES:

A. CITY OF ARCADIA STANDARD PLANS

B. CITY OF ARCADIA SPECIFICATIONS

C. A.W.W.A. STANDARD NO. C600

II. HOT-TAP EXISTING MAIN:

A. SPUR ONE SIZE SMALLER THAN EXISTING MAIN

B. TAPPING SLEEVE PER MATERIALS SECTION X, OF THIS STANDARD

C. VALVE PER MATERIALS SECTON IX, PART A OF THIS STANDARD

III. DRY-TAP OF EXISTING MAIN:

A. ONLY WITH PRIOR APPROVAL OF PWS WATER ENGINEER

B. TIME SCHEDULED BY CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT, WATER SECTION.

C. TW0 (2) OUNCES OF GRANULAR CALCIUM HYPOCHLORITE IN EXISTING MAIN AT ALL CUT POINTS

D. NEW FITTINGS SWABBED INTERNALLY WITH CHLORINE SOLUTION

E. CONNECT TO EXISTING MAIN
1. AFTER NEW MAIN IS INSTALLED
2. AFTER NEW MAIN IS PRESSURE TESTED
3. AFTER NEW MAIN HAS BEEN DISINFECTED AND TEST RESULTS APPROVED

IV. PRESSURE TESTING:

A. MAINLINE AND HYDRANT LATERALS
1. TESTED AT 225 P.S.I .
2. HOLD TEST PRESSURE FOR FOUR (4) HOURS
3. ALLOWABLE LEAKAGE PER A.W.W.A. STANDARD NO. C600

V. DISINFECTION OF PIPING:

A. SAMPLING TAPS (WHEN SPECIFIED OR REQUIRED FOR TESTING)

1. TWO (2) INCH SAMPLING TAPS
   a. TWO (2) INCH BRONZE STRAP SERVICE SADDLE AND SCREW PLUG

2. LOCATED TWO (2) FEET FROM EACH VALVE
   a. FOR AIR-RELEASE
   b. FOR MAINLINE FLUSHING
   c. FOR WATER SAMPLING
3. LEFT IN PLACE UNTIL APPROVAL OF WORK
4. PIPELINE COMPLETELY FLUSHED PRIOR TO CHLORINATION

B. CHLORINATION
1. PER A.W.W.A. STANDARD C. 651, SECTION 5.2 CONTINUOUS FEED METHOD USING CHLORINE GAS
2. FOR SHORT REACHES OF PIPE WHERE SWABING OR GAS CHLORINATION IS NOT PRACTICAL, CONTRACTOR CAN USE CHLORINE TABLETS ATTACHED TO THE TOP INSIDE OF THE PIPE USING ONLY PERMATEX NO. 2 GASKET COMPOUND

C. BACTERIOLOGICAL TESTING
1. CITY TO TAKE 2 SAMPLES OF WATER IN ACCORDANCE WITH CALIFORNIA DEPARTMENT OF HEALTH SERVICES REQUIREMENTS
2. BEFORE PIPELINE IS PUT IN SERVICE
3. REPEAT ALL PROCESSES IF TESTING FAILS OR ANY REPAIR WORK TO PIPELINE BECOMES NECESSARY DURING DISINFECTION PROCESS

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GENERAL NOTES (WATER):

1. ALL WORK DETAILED ON THE CONSTRUCTION DRAWINGS EXCEPT AS OTHERWISE STATED IN THE SPECIAL PROVISIONS OF THE CONTRACT, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ARCADIA STANDARD PLANS AND STANDARDS SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION AND AMERICAN WATER WORKS ASSOCIATION STANDARDS (LATEST EDITION AND SUPPLEMENTS).

2. ALL STATIONS AND DIMENSIONS ARE ALONG THE CENTERLINE OF PIPELINE UNLESS OTHERWISE SPECIFIED.

3. EXISTING UNDERGROUND UTILITIES ARE SHOWN AS PER AVAILABLE RECORDS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION, IF REQUIRED, IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION OF THE FACILITIES.

4. ALL P.C.C. AND A.C. REMOVALS SHALL BE OUTLINED TO NECESSARY WORKING LIMITS AND SAWCUT TO MINIMUM DEPTH OF 2 INCHES PRIOR TO THE REMOVAL. UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, ALL DEBRIS CREATED BY THE REMOVAL OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AWAY FROM THE JOB SITE IN A MANNER AND AT LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK.

5. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH MANUAL), LATEST EDITION, AND ARE SUBJECT TO THE APPROVAL OF THE CITY.

6. IN ALL OPERATIONS, THE REQUIREMENTS OF THE STATE DIVISION OF INDUSTRIAL SAFETY FOR TRENCHES, EXCAVATIONS AND SHORING SHALL APPLY. SAFETY IS STRESSED. ANY OPERATION OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL, SHALL CAUSE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE.

7. ALL OPEN TRENCH EXCAVATIONS WITHIN A STREET SHALL BE BACKFILLED AND TEMPORARY ASPHALTED DAILY UNLESS APPROVED OTHERWISE, EXCEPT WHEN THE CONTRACTOR IS PHYSICALLY WORKING WITHIN THE AREA AND HAS PLACED BARRICADES OR FENCING TO THE SATISFACTION OF THE PUBLIC WORKS SERVICES DIRECTOR.

8. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS IN SUCH A MANNER THAT STORM OR OTHER WATERS MAY PROCEED UNINTERRUPTED AND WITHOUT EROSION ALONG THEIR EXISTING STREET OR DRAINAGE COURSES.

9. IN THE COURSE OF RUNOFF WATER CONTROL, THE CONTRACTOR SHALL PROTECT ALL WATER COURSES, THE GROUNDWATER AND BODIES OF WATER FROM POLLUTION BY FUELS, OILS, BITUMENS OR OTHER HARMFUL MATERIALS.

10. HARD HATS AND HIGH VISIBILILTY ORANGE VESTS SHALL BE WORN AT ALL TIMES WHEN WORKING ON THIS PROJECT.

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11. EXACT LOCATION, ELEVATION AND CONFIGURATON OF CONNECTIONS TO EXISTING WATER PIPELINES SHALL BE DETERMINED BY THE CONTRACTOR AT THE TIME OF CONSTRUCTION.

12. ALL NEW WATER PIPE SHALL BE INSTALLED WITH A 42 INCH MINIMUM COVER, UNLESS APPROVED OTHERWISE BY THE PWS DIRECTOR.

13. A CITY P.W. INSPECTOR OR DESIGNEE MUST BE PRESENT FOR ALL STAGES OF HOT TAPPING, PRESSURE TESTING AND DISINFECTION.

14. THE CONTRACTOR SHALL NOT INSTALL THE WATER MAIN SUCH THAT AN INTERMEDIATE HIGH POINT RESULTS UNLESS APPROVED BY THE ENGINEER.

15. AS-BUILT LOCATIONS OF THE WATER MAIN SHALL BE RECORDED BY THE CONTRACTOR AND FILED WITH CITY PRIOR TO ACCEPTANCE OF THE PROJECT.

16. WHEN ABANDONING AN EXISTING FIRE HYDRANT ASSEMBLY, CLOSE VALVE, REMOVE VALVE BOX, PLUG LATERAL END (THRUST BLOCK IF REQUIRED) FILL REMAINING VALVE RISER HOLE WITH ¾ SACK SLURRY MIX TO TOP OF SUBGRADE AND RETURN FIRE HYDRANT AND BURY TO THE CITY YARD. SEE CITY OF ARCADIA STANDARD PLAN NO. 706.

17. THE CONTRACTOR SHALL PROVIDE AND INSTALL NEW SERVICE LINES IN ACCORDANCE WITH THE WATER SERVICE SCHEDULES AND CONNECT AS CUSTOMER'S LINES REQUIRED (REFER TO APPROPRIATE CITY OF ARCADIA STANDARD PLAN). NEW SERVICE LINES SHALL BE INSTALLED WITHIN 2 FEET OF EXISTING SERVICE LINES UNLESS OTHERWISE SPECIFIED. ALL NEW SERVICE LINE LOCATIONS TO BE VERIFIED BY CITY WATER FORCES. ABANDON EXISTING SERVICE LATERALS PER CITY OF ARCADIA STANDARD PLAN NO. 704.

18. BEFORE STARTING WORK, THE CONTRACTOR SHALL OBTAIN A PERMIT FROM THE CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT.

19. ALL THRUST AND ANCHOR BLOCKS MUST BE INSPECTED AND APPROVED PRIOR TO PLACING CONCRETE AND PRIOR TO BACKFILL.

20. **ALL EXISTING VALVES AND FIRE HYDRANTS SHALL BE OPERATED BY CITY OF ARCADIA, PUBLIC WORKS SERVICES DEPARTMENT, WATER SECTION PERSONNEL EXCLUSIVELY.**

21. ALL NEW AND EXISTING FIRE HYDRANTS OF THE PROJECT THAT ARE NOT IN SERVICE, SHALL BE COVERED WITH A SACK INDICATING "NOT-IN-SERVICE" UNTIL ENTIRE PROJECT HAS BEEN ACCEPTED FOR SERVICE.

22. FAILUE TO COMPLY WITH ANY OF THE ABOVE ITEMS SHALL BE SUFFICIENT CAUSE FOR THE CITY TO ARRANGE FOR THE NECESSARY WORK TO BE PERFORMED BY OTHERS. ANY COSTS INCURRED TO COMPLETE THE NECESSARY WORK WILL BE CHARGED TO THE CONTRACTOR.

23. CONCRETE THRUST BLOCKS EXIST AT ALL TEES, BENDS, CROSSES, AND OTHER WATER MAIN FITTINGS. THE CONTRACTOR SHALL WORK WITH CAUTION WHEN EXCAVATING IN THE VICINITY OF ANY THRUST BLOCK. THE CONTRACTOR SHALL NOT DISTURB EXISTING THRUSTS BLOCKS.

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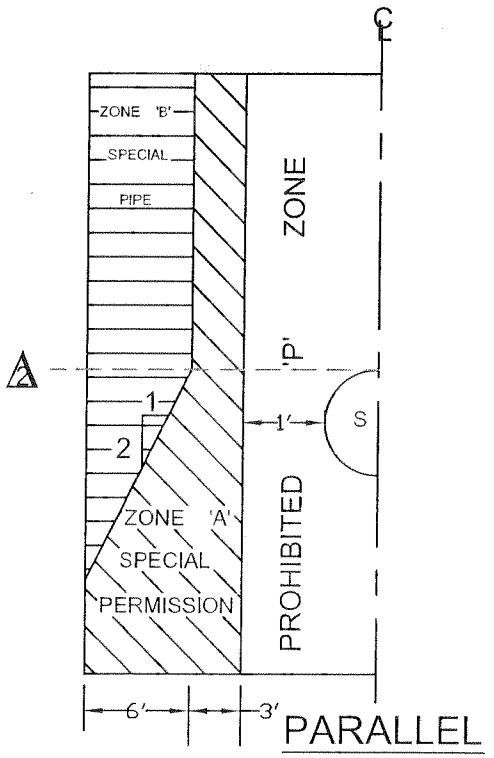
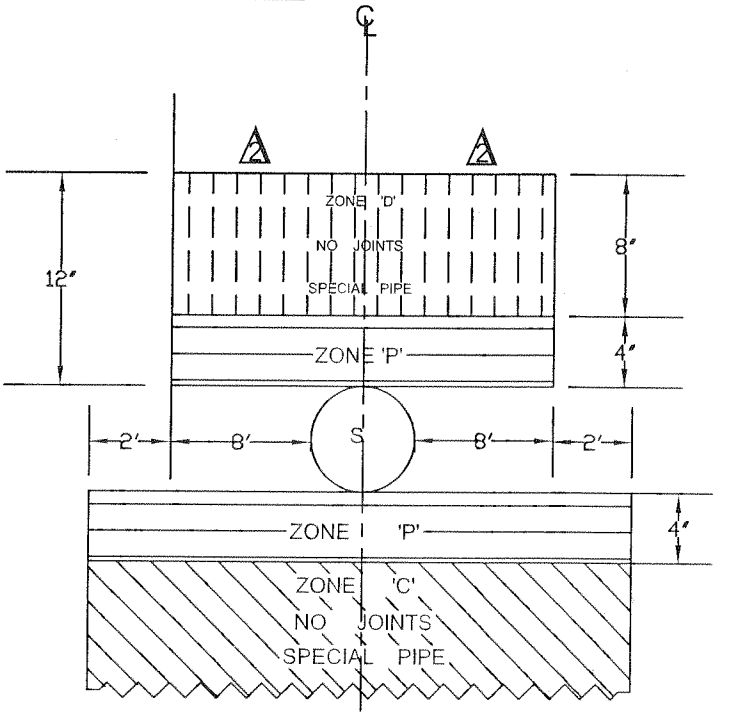
SHEET 8 OF 8

NEW WATER MAIN



PARALLEL



CROSSING

NOTES :

1. ZONE 'P' IS A PROHIBITED ZONE PER SECTION 64630 (e) (2) CALIFORNIA ADMINISTRATIVE CODE, TITLE 22.
2. ZONE 'A' IS A NO CONSTRUCTION ZONE WITHOUT APPROVAL FROM RESPONSIBLE HEALTH AGENCY AND WATER SUPPLIER.
3. ZONE 'B': NEW WATER MAIN WILL BE CONSTRUCTED OF :
   A. DUCTILE IRON PIPE, CLASS 52, CEMENT MORTAR LINED WITH COMPRESSION JOINTS. 1
4. ZONE 'C': NEW WATER MAIN WILL BE CONSTRUCTED OF DUCTILE IRON PIPE, CLASS 52, WITH HOT DIP BITUMINOUS COATING, CEMENT MORTAR LINING. 1
5. ZONE 'D': NEW WATER MAIN WILL BE CONSTRUCTED OF DUCTILE IRON PIPE, CLASS 52, WITH HOT DIP BITUMINOUS COATING, CEMENT MORTAR LINING. 1
6. CRITERIA ALSO APPLIES TO WATER MAINS THAT CROSS BELOW A SEWER LATERAL BUT NOT THOSE THAT CROSS ABOVE.
7. PIPE, COATING AND LINING SHALL BE PER A.W.W.A. STANDARD SPECIFICATIONS.

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WATER MAIN AND SEWER SEPARATION REQUIREMENTS

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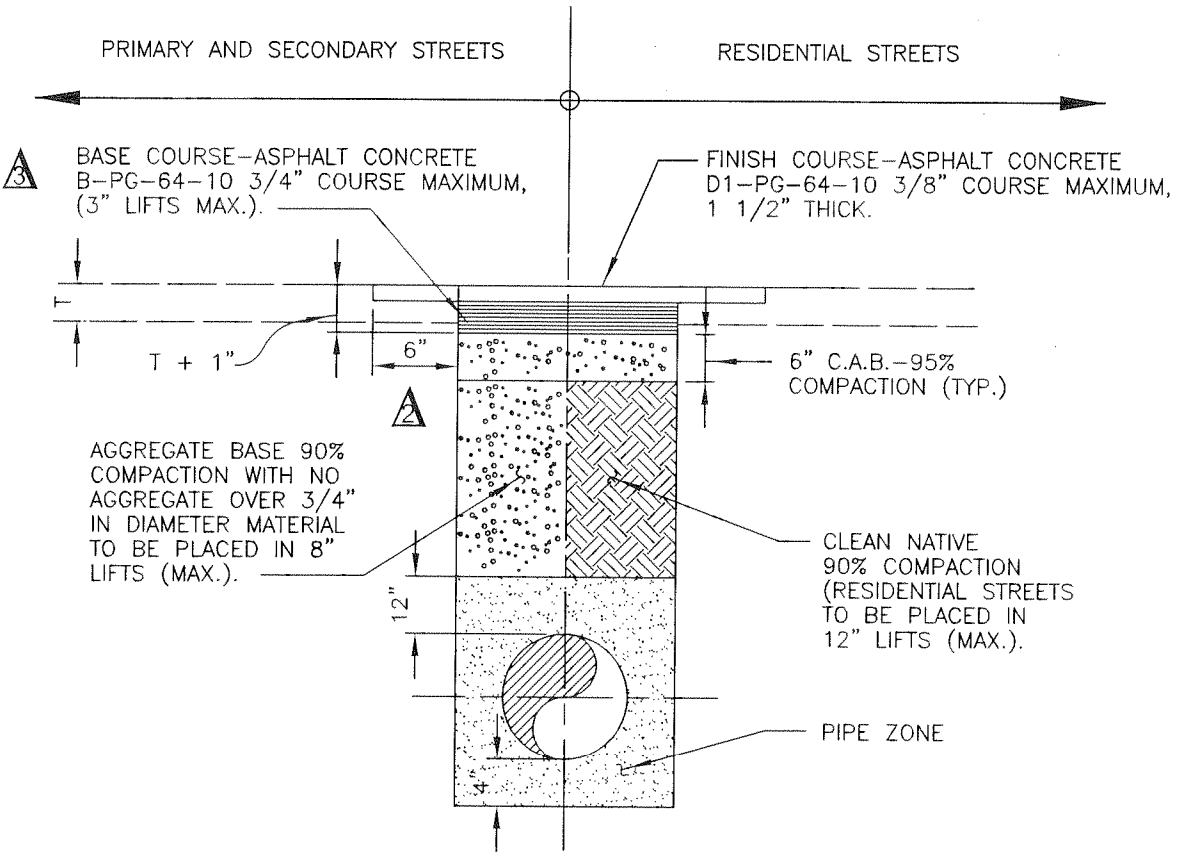


NOTES

1. MINIMUM TRENCH WIDTH IS EQUAL TO PIPE O.D. +12".
2. MAXIMUM TRENCH WIDTH IS EQUAL TO PIPE O.D. +20".
3. WHEN THE EXCAVATED TRENCH CANNOT PROVIDE UNIFORM BEARING (ROCKY CONDITIONS), THE TRENCH SHALL BE OVER EXCAVATED (3" MIN.) AND BACK FILLED TO THE DESIGN FLOW LINE WITH MATERIAL WITH A SAND EQUIVALENT OF 20.
4. PIPE ZONE MATERIAL SHALL HAVE A SAND EQUIVALENT OF 20 AND SHALL BE COMPACTED TO 90% RELATIVE COMPACTION.
5. IF THE EXCAVATION EXCEEDS 5' IN DEPTH, APPROVED SHORING IS REQUIRED PER OSHA STANDARD 1541.1 – REQUIREMENTS FOR PROTECTIVE SYSTEMS.
6. AGGREGATE BASE OR NATIVE BACKFILL MATERIAL SHALL REQUIRE COMPACTION REPORT FROM A QUALIFIED SOILS TESTING LABORATORY. 1 SACK SAND-CEMENT SLURRY MAY BE USED IN LIEU OF PROVIDING SOILS REPORT.

CITY OF ARCADIA CALIFORNIA Incorporated August 3, 1903 Community of Homes

PUBLIC WORKS SERVICES

TRENCH DETAIL

REVISIONS:	DATE	REVISIONS:	DATE
1	10/28/02	3	01/09/07
2	03/18/03	4	

SCALE: NOT TO SCALE

APPROVED: _____ 1/15/07
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR DATE

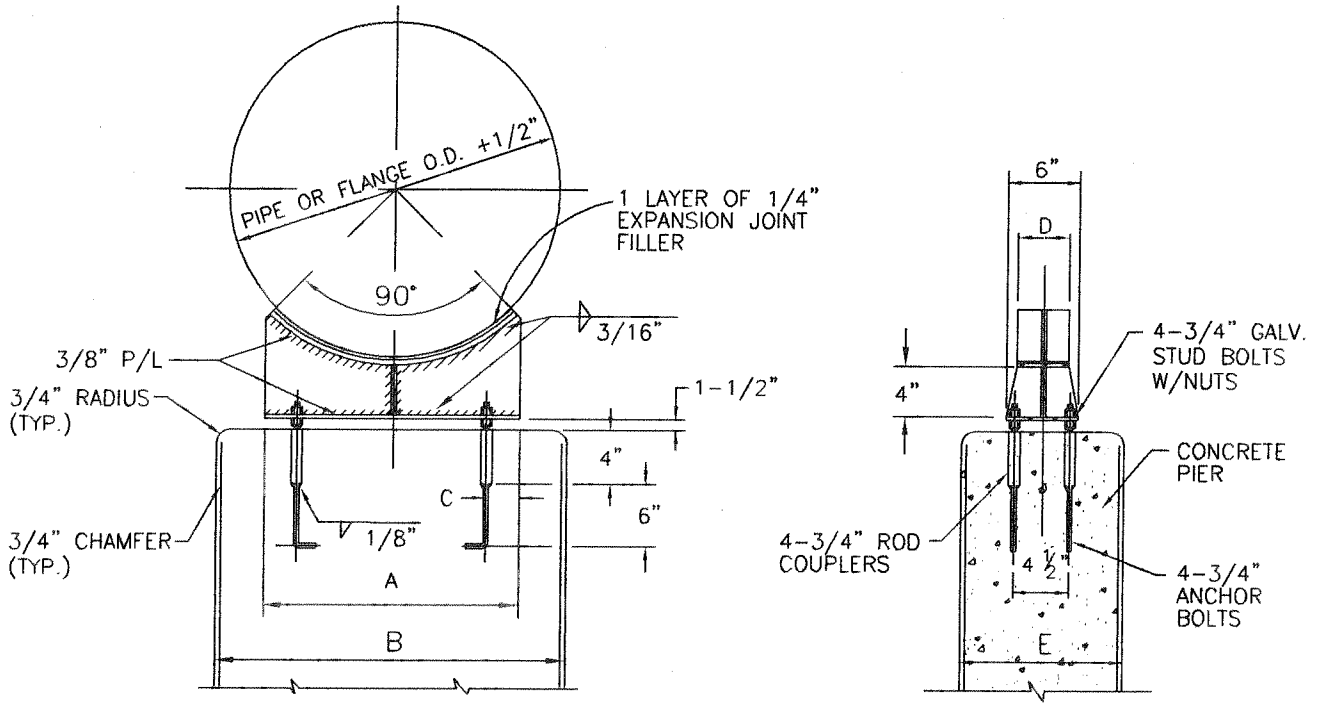
APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER RCE No. DATE

STANDARD PLAN NUMBER

702

SHEET 1 OF 1

NOTE: PIPE SUPPORTS TO BE LOCATED IN PLAN AT POINTS MARKED BY "X" OR AS SHOWN. SET ROD COUPLERS PLUMB AND FLUSH WITH CONCRETE.



DIMENSIONS IN INCHES							
NOMINAL SIZE PIPE	SUPPORTING PIPE OR FLANGE			SUPPORTING PIPE		FLANGE	
	C	D	E	A	B	A	B
6	2	4	12	10	16	10	16
8 & 10	2	4	12	10	16	14	20
12 & 14	2	4	12	12	18	16	22
16 & 18	2	4	12	14	20	20	26
20 & 22	3	5	12	16	22	22	28
24	3	5	12	18	24	24	30

GALVANIZE AFTER FABRICATION

NOTE: WHEN SUPPORTING ON THE SAME LINE ALTERNATIVELY PIPE AND FLANGE, CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION B (FOR FLANGE SUPPORT).

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

PIPE SUPPORT

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

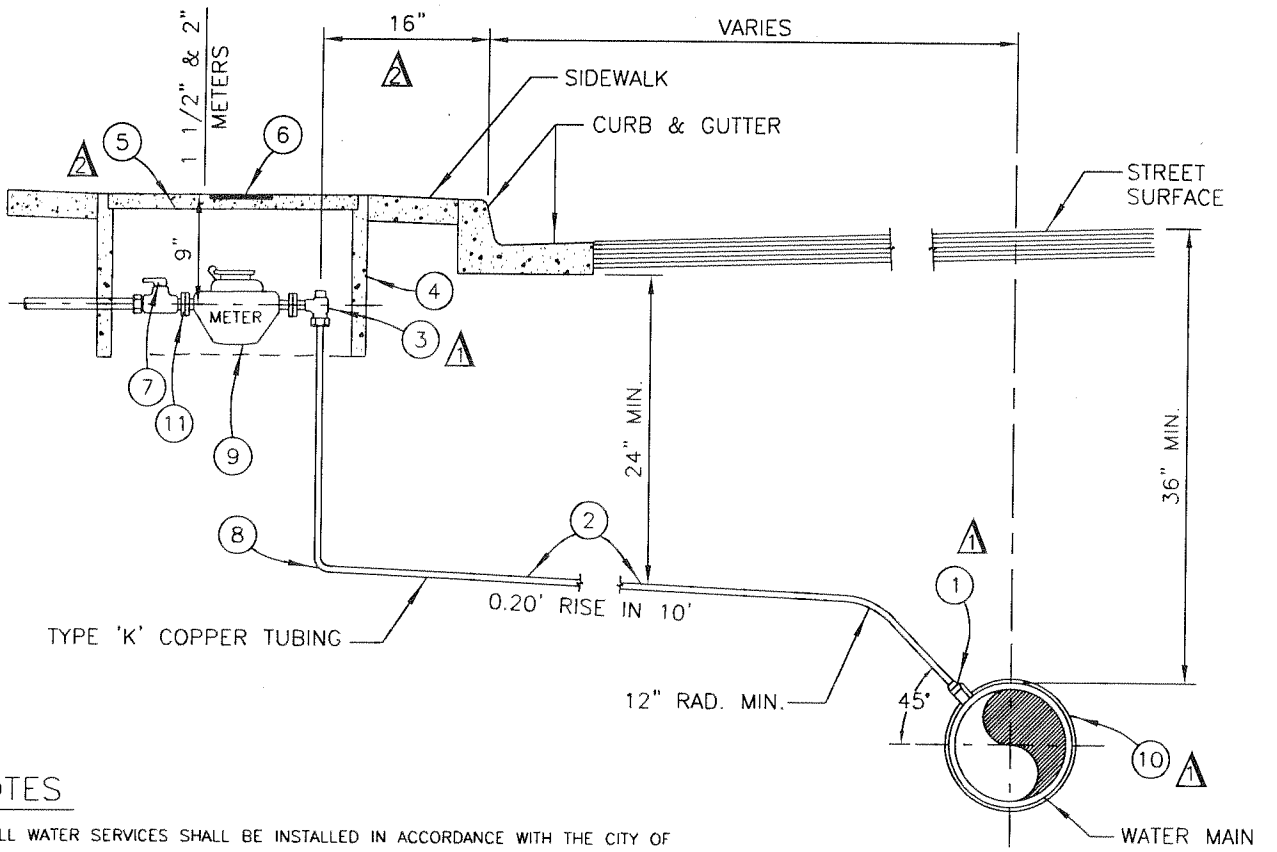
APPROVED: [signature] 8/15/00
CITY OF ARCADIA - PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: [signature] 14527 7/27/00
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

703

SHEET 1 OF 1



NOTES

1. ALL WATER SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF ARCADIA STANDARD DRAWING 700.
2. ALL TRENCH AND BACKFILL SHALL BE IN ACCORDANCE TO THE CITY OF ARCADIA STANDARD DRAWING 702.
3. NO WATER SERVICE LATERAL OR METER SHALL BE PERMITTED IN ANY DRIVEWAY. NOR SHALL THEY BE LOCATED LESS THAN THREE (3) FEET FROM TOP OF "X" OF ANY DRIVEWAY OR OTHER UTILITY INSTALLATION.
4. COPPER TUBING SHALL BE INSTALLED IN A WORKMANLIKE MANNER. BURIED TUBING SHALL BE INSTALLED AS SHOWN OR AS DIRECTED. BENDS SHALL BE MADE BY THE USE OF FITTINGS OR WITH A BENDING TOOL OF THE PROPER RADIUS TO AVOID FLATTENING OR KINKING THE TUBING. FOR TUBING LARGER THAN 1-INCH DIAMETER, COPPER FITTINGS SHALL BE USED FOR DEFLECTION ANGLES OF 45° OR MORE. TUBING THAT HAS BEEN FLATTENED, KINKED, OR WRINKLED SHALL BE REPLACED. TUBES AND FITTINGS SHALL BE CLEANED OF ALL IMPURITIES BEFORE MAKING JOINTS.
5. SERVICE TAP 45 DEGREES UP

ITEM	DESCRIPTION	MANUFACTURER OR EQUAL
(1)	2" CORPORATION STOP - CC PIPE THREAD INLET BY CTS COMPRESSION OUTLET	MUELLER B25008, FORD FB 1000-7-Q, JONES J1937SG
(2)	SERVICE LINE 2" 'K' COPPER TUBING (SOFT)	
(3)	ANGLE METER STOP - BALL VALVE W/ LOCK WING(CTS CONPRESSION INLET X FLG OUTLET)	MUELLER 24276, FORD BFA 43-777W-Q, JONES J1975WSG
(4)	METER BOX 17"X30"X12" PEDESTRIAN RATED	ARMORCAST P6001534X12
(5)	METER BOX COVER	ARMORCAST A6001643DZ
(6)	METER READ COVER	ARMORCAST A6000482 LOGO: "WATER"
(7)	2" OR 1-1/2" BRASS BALL VALVE, OR GATE VALVE W/ HANDLE	MUELLER, FORD, JONES
(8)	2" 90° SOLDER BEND	
(9)	METER 1-1/2" - MJ11-2MD-AAA-2 PROGRAMMED TO UTILITY CODE #83	MASTER METER
(9)	METER 2" - MJ13-2MD-AAA-2 PROGRAMMED TO UTILITY CODE #83	MASTER METER
(10)	(SIZE OF MAIN) X 2" DOUBLE STRAP SADDLE WITH CC PIPE THREAD	MUELLER DR2A, FORD F-202, SMITH BLAIR 313, ROMAC
(11)	1-1/2" OR 2" FLG X MIP BRONZE METER FLANGE	MUELLER, JONES, FORD

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

1-1/2" AND 2" SERVICE CONNECTIONS

REVISIONS:	DATE	REVISIONS:	DATE
1	3/31/05	3	
2	12/29/06	4	

SCALE: NOT TO SCALE

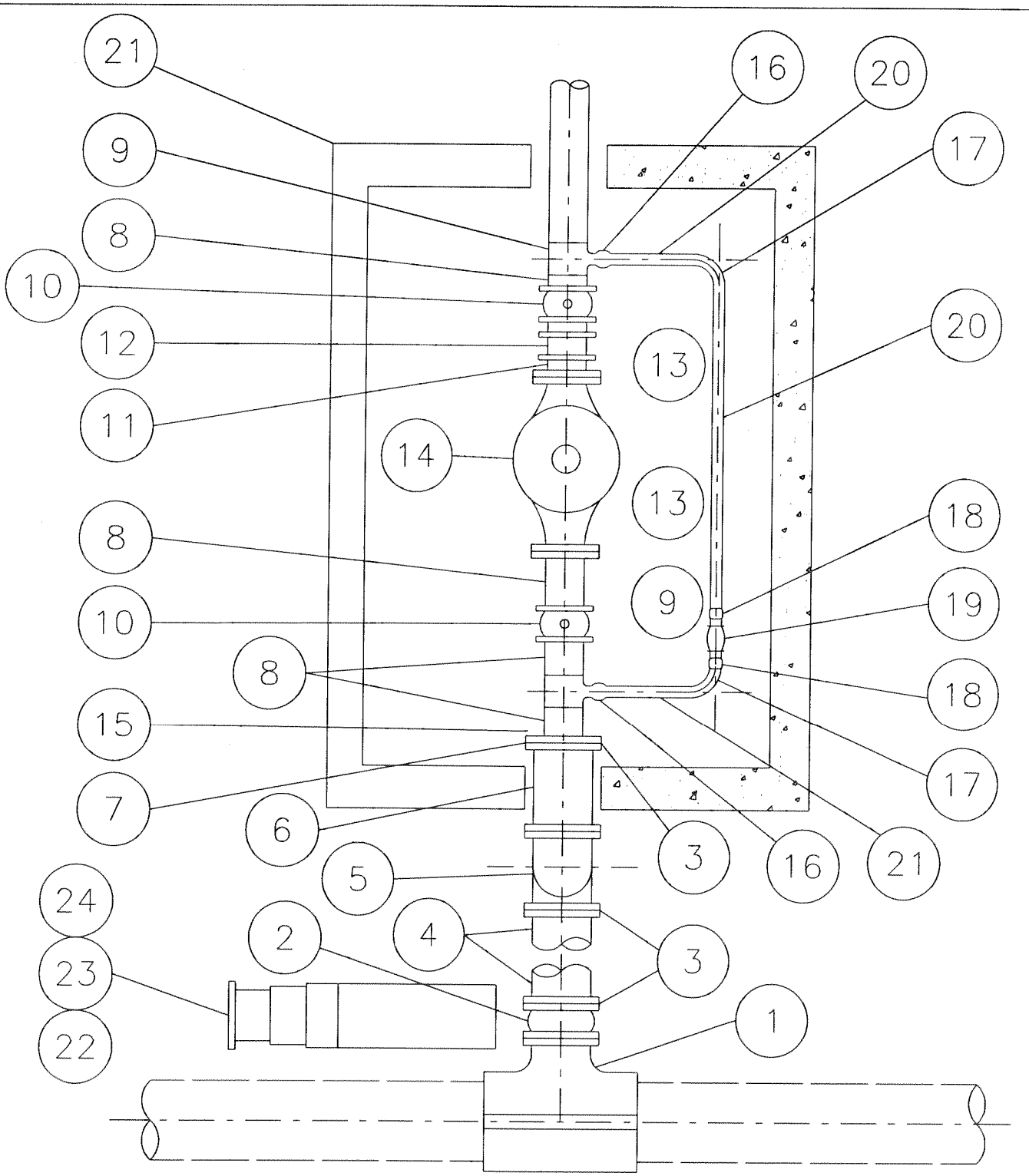
APPROVED: _____ 1/15/07
CITY OF ARCADIA-PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

704

SHEET 1 OF 1



3" COMPOUND METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

APPROVED: _____ 1/15/07
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

PUBLIC WORKS SERVICES

STANDARD PLAN NUMBER

705

SHEET 1 OF 2

NO.	DESCRIPTION	MAKE, MODEL OR MATERIAL
1.	(SIZE OF MAIN) x 4" M.J. x F.E. TEE OR (SIZE OF MAIN) x 4" M.J. x F.E. TAPPING SLEEVE	CAST IRON OR DUCTILE IRON PRESSURE CL. 300 (MIN.)
2.	4" M.J. x F.E. TAPPING VALVE OR 4" M.J. x F.E. BUTTERFLY VALVE	M&H AWWA C504-450 OR PRATT CLOW F-5093
3.	4" M.J. RETAINING GLAND WITH SET SCREWS	ROMAC OF GRIP TITE
4.	4" DUCTILE IRON PIPE	CLASS 52 OR PRESSURE C1.350 U.S. PIPE OR PACIFIC STATES
5.	4" x 18" M.J. OFFSET	DUCTILE OR GREY IRON, C1. 250
6.	4" x 16" F.E. x P.E. ADAPTER	DUCTILE OR GREY IRON, C1. 250
7.	4" x 3" COMPRESSION REDUCING FLANGE	
8.	3" NIPPLE	BRASS
9.	3" x 1" TEE	BRASS 2308 TE
10.	3" BALL VALVE	2511 VL
11.	3" x 12" NIPPLE (CUT TO FIT FLEX. CPLG.)	BRASS
12.	3" FLEX. COUPLING	1223 CO
13.	3" FLANGE (4 HOLE)	
14.	3" METER DC14-2BM-AJA-2 W/(2) - 199 004 45 3GDS CLIP ON TRANCERVERS, PROGRAMMED TO UTILITY CODE #83	MASTER METER
15.	3" THREADED FLANGE	
16.	1" SWEAT NIPPLE	COPPER
17.	1" 90° SOLDER ELL	COPPER
18.	1" STRAIGHT METER COUPLING (FLAIR x MALE THREAD)	
19.	1" STRAIGHT CURB STOP (COPPER BOTH ENDS)	FORD B22-444
20.	1" COPPER TUBING, TYPE "K"	
21.	CONCRETE METER VAULT (3'-0" x 5'-0" INSIDE)	BROOKS VAULT NO. 736
22.	6" VALVE CAP	CAST IRON (WATER) SEE NOTES
23.	6" DIA. VALVE CAN	BLUE BRUT (CUT TO FIT)
24.	6" DIA. x 18" VALVE SLEEVE	14-GAUGE GALVANIZED STEEL

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

3" COMPOUND METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

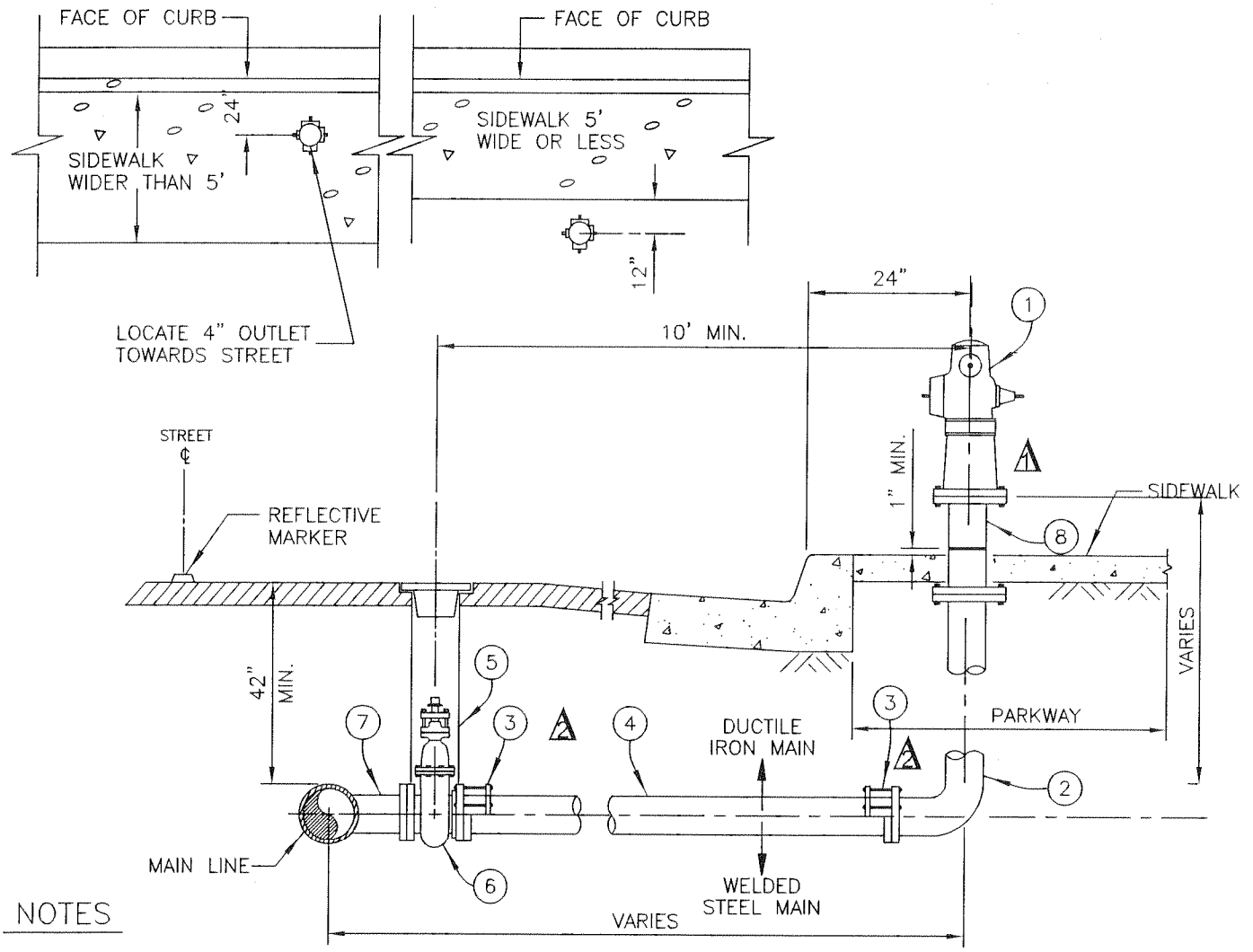
APPROVED: _____ 11/15/07
CITY OF ARCADIA - PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

705

SHEET 2 OF 2



NOTES

1. IN CONCRETE STREETS, VALVE CAP AND SLEEVE SHALL BE REPLACED WITH J&R CONCRETE VALVE BOX No. 4TT. THEY SHALL BE SUPPORTED ON REDWOOD BLOCKS. THE VALVE BOX CAP SHALL BE CAST IRON WITH A MINIMUM BODY DEPTH OF (6) INCHES AND THE WORD "WATER" CAST INTO THE TOP SURFACE.
2. FIRE HYDRANTS SHALL BE PAINTED WITH (2) COATS OF RUSTOLEUM "SCHOOL BUS YELLOW".

ITEM	DESCRIPTION	MANUFACTURER OR EQUAL
(1)	6" x 2-1/2" x 4" FIRE HYDRANT HEAD, 8 HOLE BOLT PATTERN, BRASS BODY & OUTLETS STANDARD SHOPCOAT, 1-1/8" PENT NUTS, PLASTIC CAPS. RESIDENTIAL OUTLETS 1 – 2-1/2", 1 – 4" COMMERCIAL OUTLETS 1 – 2-1/2", 2 – 4"	JONES 3710R, 3775R OR CLOW 2050, 5065
(2)	FLANGED x MECHANICAL JOINT BURY, DUCTILE IRON (CLASS 350) OR FLANGE x FLANGE BURY, CMC & C, STEEL (STANDARD WEIGHT)	ROMAC – GRIP RING EBAA IRON–MEGALUG RESTR. RING
(3)	THRUST RESTRAINT OR RING FLANGE (WELDED STEEL) SHIP LOOSE.	
(4)	DUCTILE IRON, OR CML & C STEEL, STANDARD WEIGHT	
(5)	VALVE CAN (SCH. 80 PVC)	
(6)	FLANGED x MECHANICAL JOINT OR FLANGED x FLANGED GATE VALVE	
(7)	MAIN SIZE x 6", FLANGED OR MECHANICAL JOINT x FLANGE, DUCTILE IRON TEE	
(8)	BREAKAWAY SPOOL, STANDARD BOLTS	CLOW LB-400

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

6" FIRE HYDRANT INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1	3/19/03	3	
2	12/29/06	4	

SCALE: NOT TO SCALE

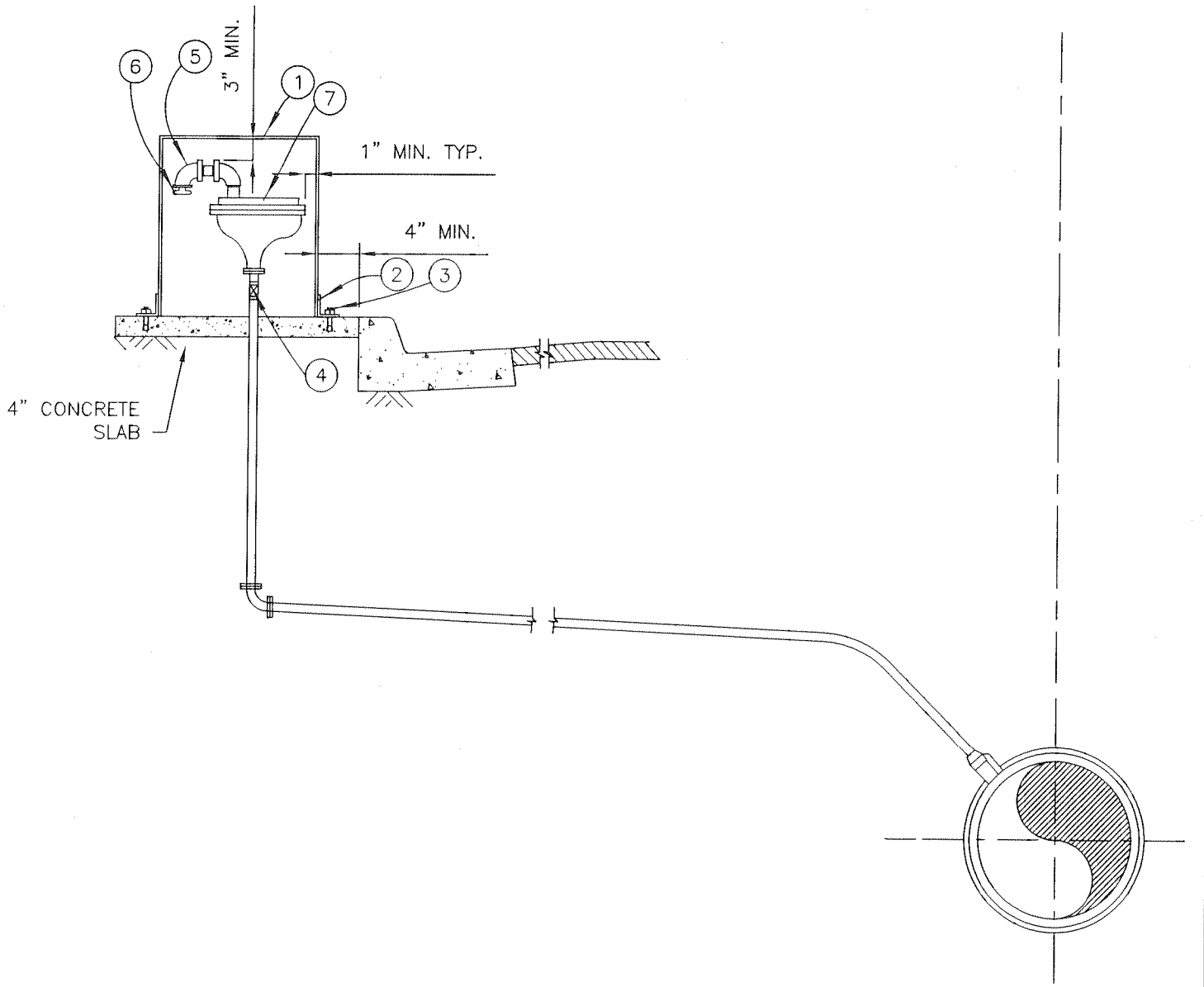
APPROVED: _____ 1/15/07
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

706

SHEET 1 OF 1



NOTES:

FOR SERVICE LATERAL PIPING AND CONNCTION TO WATER MAIN SEE STD. 704

ITEM	DESCRIPTION	MANUFACTURE OR EQUAL
①	10 GA. WELDED STEEL COVER	PAINTED WITH 2 COATS ZINC PRIMER, 1 COAT EPOXY ENAMEL, COLOR - GREEN
②	2"X2"X2" LG ANGEL WELDED TO COVER	
③	3/8" X4" WEDGE ANCHOR	
④	2" BRASS BALL VALVE	
⑤	2" GALV. PIPE GOOSENECK ASSEMBLY	
⑥	BIRDSCREEN CAP	
⑦	2" COMBINATION AIR RELEASE AND AIR VACUUM RELEASE VALVE	APCO 145 C, OR VALMATIC 202C.2

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

2" VACUUM & AIR RELEASE VALVE ASSEMBLY

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

APPROVED: _____ 1/15/07
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

707

SHEET 1 OF 1

NOTES:

1. THE FUTURE EXTENSION STUB SHALL BE TESTED AND CHLORINATED WITH THE REST OF THE MAIN AND BLOWN OFF THROUGH THE 2-INCH PLUG.
2. ALL 2-INCH MATERIAL SHALL BE COPPER.
3. ALL SOLDER USE "SILVER SOLDER", 15%

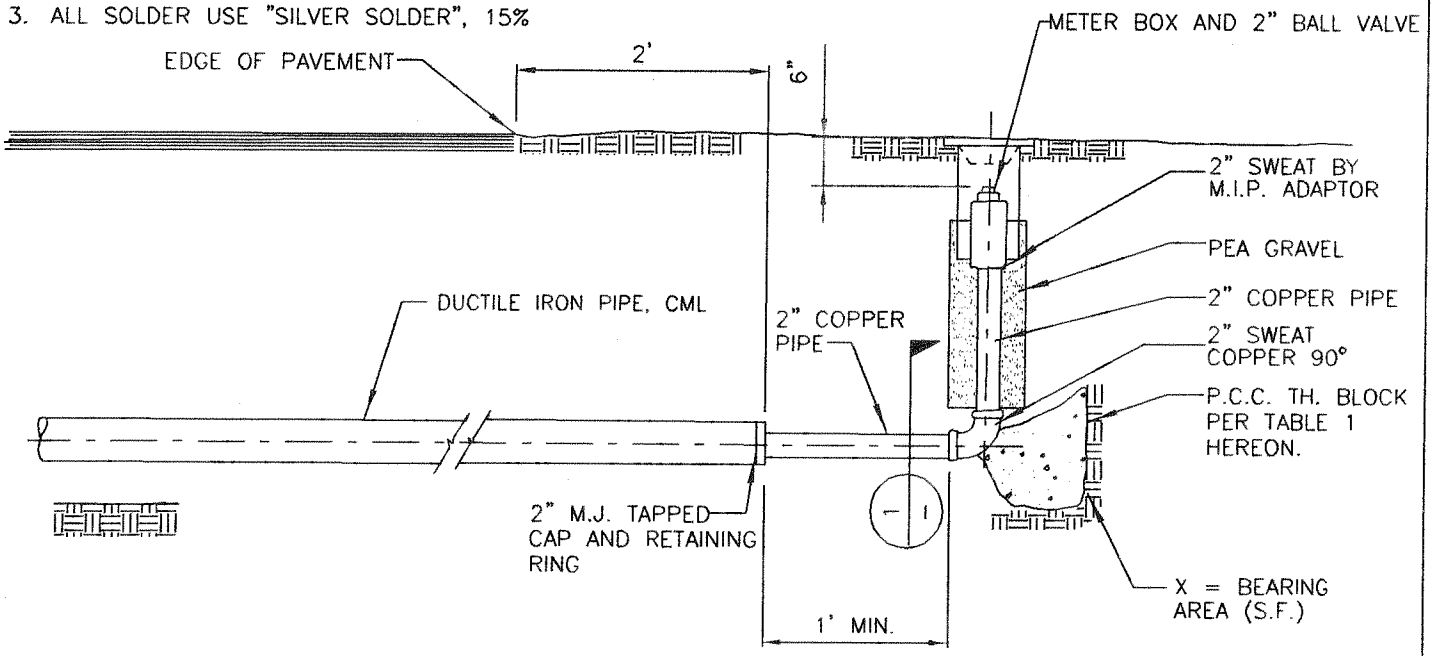
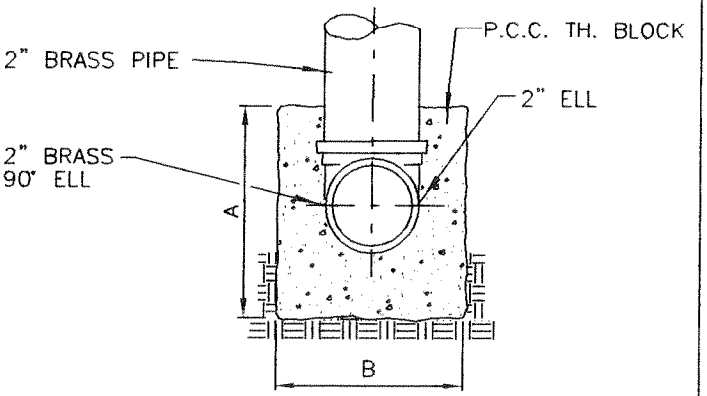


TABLE 1

PIPE SIZE	A	B	X
6"	1'-0"	1'-0"	4
8"	1'-0"	1'-0"	7



SECTION 1/1

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED - 1903

DEPARTMENT OF PUBLIC WORKS

2" BLOW-OFF ASSEMBLY

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

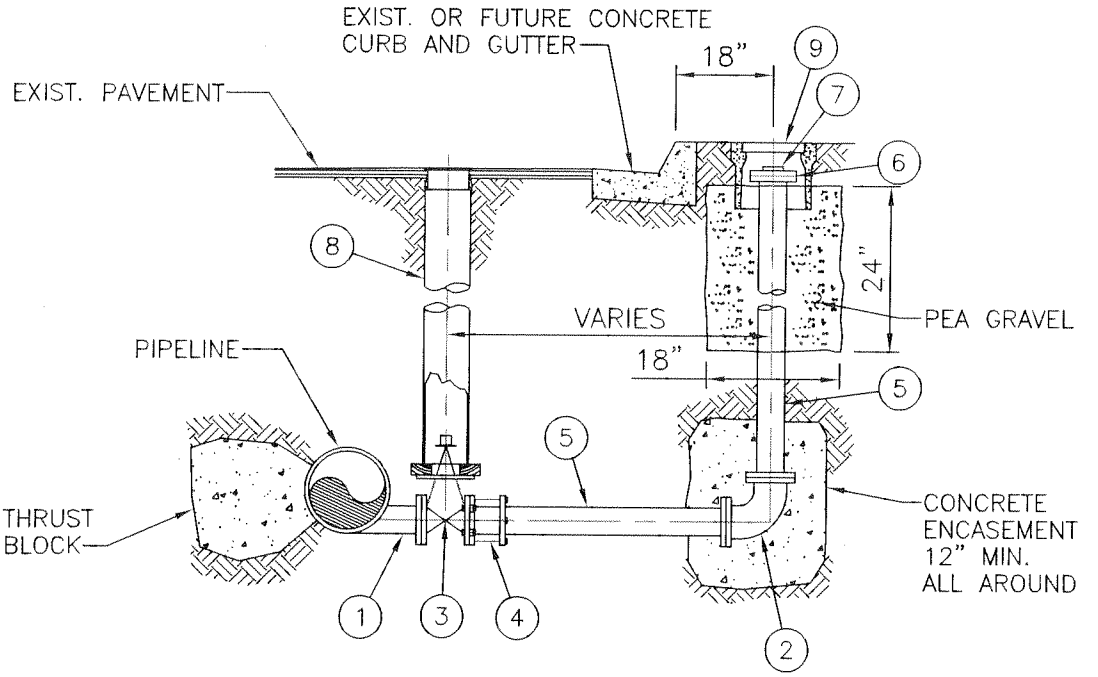
APPROVED: _____ 8/15/00
CITY OF ARCADIA-PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 14527 7/27/00
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

708

SHEET 1 OF 1



ITEM	DESCRIPTION	MANUFACTURER OR EQUAL
(1)	4" FLANGED TANGENTIAL OUTLET	
(2)	4" – 90° D.I. BEND, FEXFE	
(3)	4" R.S.G.V., CLASS 150, O.A.E.	MUELLER
(4)	4" ADAPTOR, FEXMJ	
(5)	4" CLASS 52 DUCTILE IRON SPOOL FLGXFLG (LENGTH AS REQUIRED)	
(6)	4" X 2" FIP COMPANION FLANGE	
(7)	2" GALV. MIP PLUG	
(8)	VALVE BOX ASSEMBLY	
(9)	CONCRETE METER BOX WITH LOCKING COVER, QUIKSET WQ-30, O.A.E.	

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

4" BLOW-OFF ASSEMBLY

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

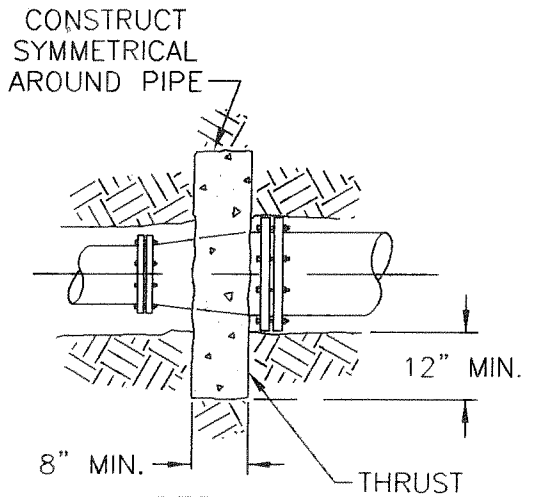
APPROVED: _____ 1/15/07
CITY OF ARCADIA – PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

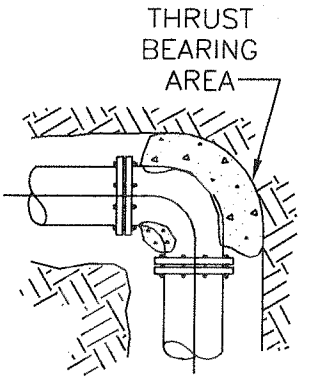
STANDARD PLAN NUMBER

709

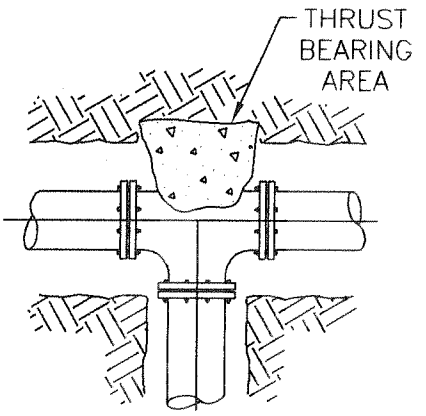
SHEET 1 OF 1



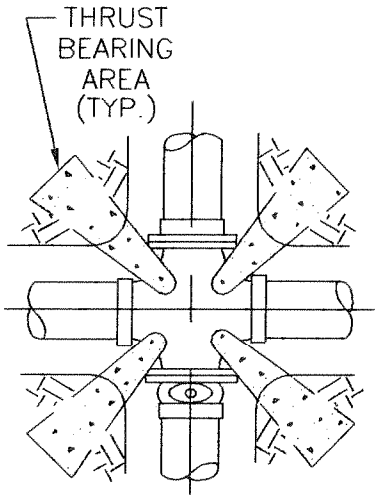
REDUCER PLAN



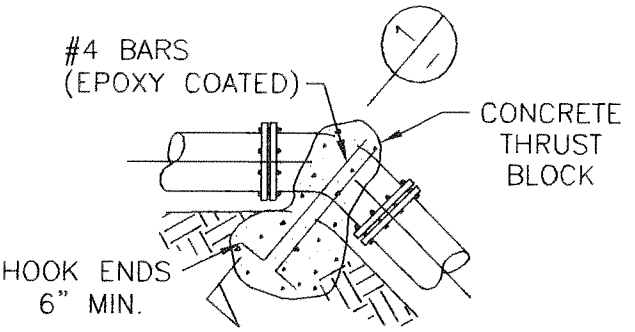
BEND PLAN



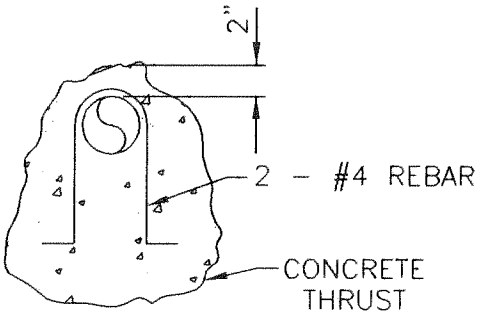
TEE OR PLUG PLAN



CROSS WITH VALVE PLAN



VERTICAL BEND



SECTION 1/—

COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED - 1903
PUBLIC WORKS SERVICES

THRUST AND ANCHOR BLOCKS

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

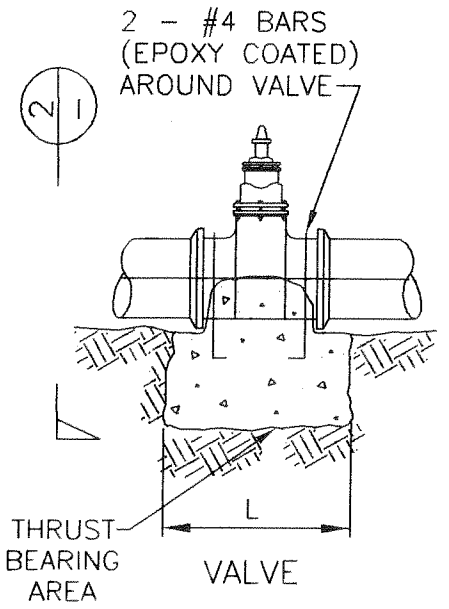
APPROVED: [signature] 8/15/00
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR DATE

APPROVED: [signature] 14527 7/27/00
CITY OF ARCADIA – CITY ENGINEER RCE No. DATE

STANDARD PLAN NUMBER

710

SHEET 1 OF 2



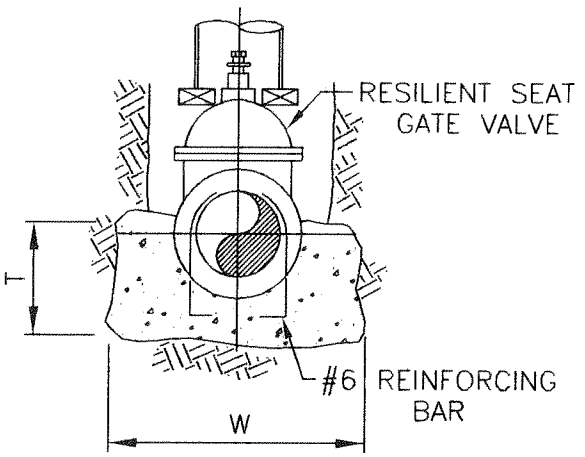
THRUST BEARING AREA (SQUARE FEET)

PIPE SIZE		6"	8"	10"	12"
TEST PRESSURE (PSI)		150	150	150	150
BENDS	90°	4.0	7.1	11.1	16.0
	45°	2.2	3.8	6.0	8.7
	22.5°	2.0	2.0	3.1	4.4
	11.25°	2.0	2.0	2.0	2.2
PLUG		5.7	10.1	15.7	22.6
TEE/VALVE		2.8	5.0	7.9	11.3
CROSS *		2.8	5.0	7.9	11.3
REDUCER		2.0	4.0	7.0	10.0

* WITH A VALVE

TABLE(S) BASED ON SOIL BEARING VALUE OF 1500 lb. PER SQUARE FOOT.

CALCULATIONS MUST BE SUBMITTED FOR OTHER SOIL BEARING VALUES OR OTHER TEST PRESSURE IN WATER MAIN.



SECTION 2/—

VERTICAL ANCHOR (CUBIC FEET OF P.C.C.)

PIPE SIZE		6"	8"	10"	12"
TEST PRESSURE (PSI)		150	150	150	150
BENDS	90°	62	111	173	249
	45°	44	78	122	176
	22.5°	24	42	66	95
	11.25°	12	22	34	49

VALVE AND PIPE SIZE	(L) LENGTH	(W) WIDTH	(T) THICKNESS
6"	2'	2'-0"	12"
8"	3'	2'-2"	14"
10"	3'	2'-4"	14"
12"	4'	2'-6"	15"

NOTES:

1. THRUST BLOCKS MUST BEAR ON UNDISTURBED SOIL.
2. CONCRETE FOR THRUST & ANCHOR BLOCKS SHALL BE OF CLASS 480-C-2000 IN ACCORDANCE WITH S.S.P.W.C. IT SHALL BE POURED (12" THICK MIN.) AGAINST UNDISTURBED SOIL. P.C.C. SHALL BE KEPT CLEAR OF JOINTS & BOLTS.
3. WHEN BOLTED JOINTS ARE UTILIZED, SET FORMS TO SEPARATE BOLTS FROM P.C.C. TO ASSURE ACCESS TO BOLTS & JOINTS.

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

THRUST AND ANCHOR BLOCKS

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

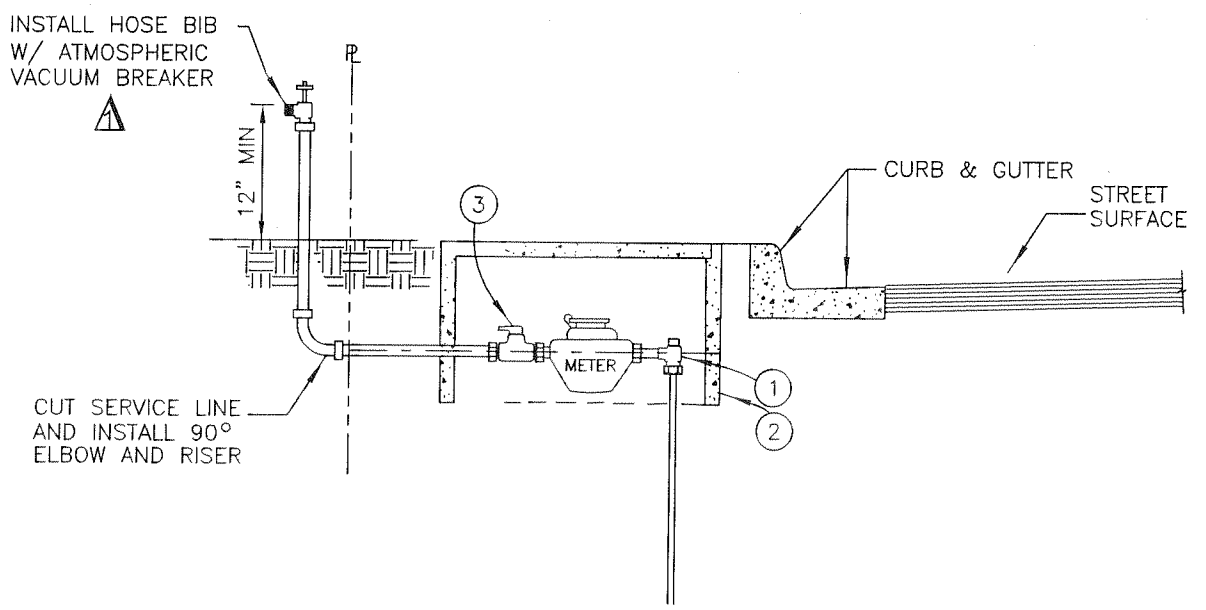
APPROVED: _____ 8/15/00
CITY OF ARCADIA-PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: Stanley E Adsit 14527 7/27/00
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

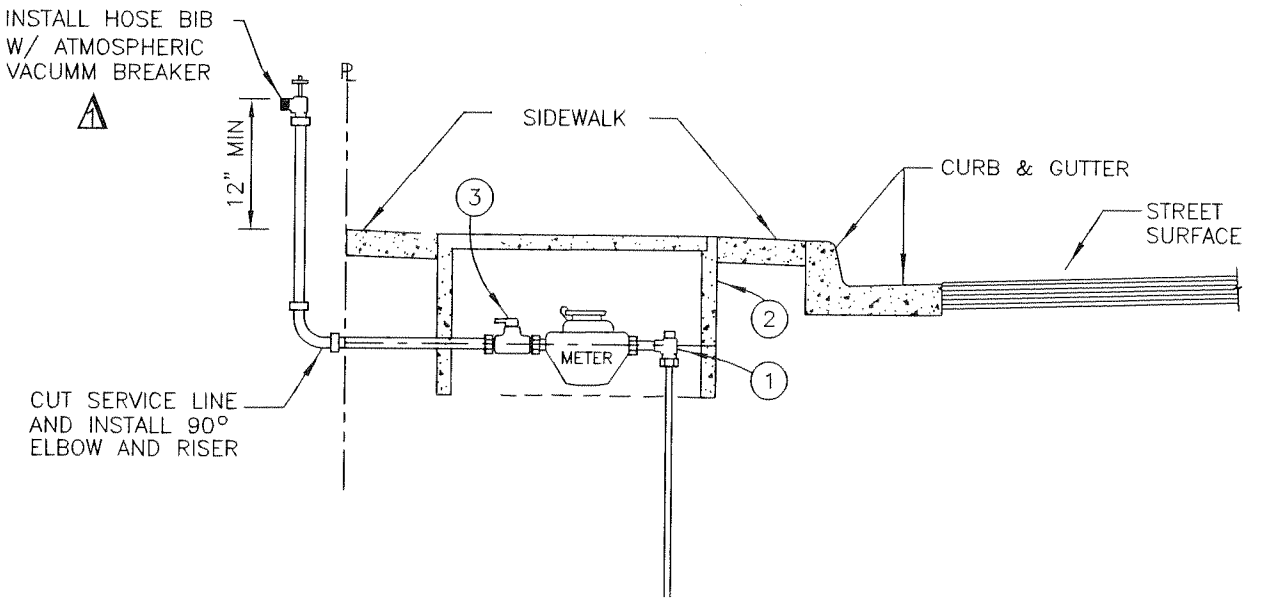
STANDARD PLAN NUMBER

710

SHEET 2 OF 2



STANDPIPE INSTALLATION - NO SIDEWALK



STANDPIPE INSTALLATION - ADJACENT SIDEWALK

ITEM	DESCRIPTION	MANUFACTURER OR EQUAL
(1)	ANGLE METER STOP – BALL VALVE W/ LOCK WING & PACK JOINT FOR COPPER	FORD FB 1000, 2" OR JONES J1937, 2"
(2)	METER BOXES (SUPPLIED BY THE CITY AT DEVELOPER'S COST).	
(3)	2" OR 1–1/2" BRASS BALL VALVE W/ HANDLE.	FORD, JONES, MUELLER

CITY OF ARCADIA CALIFORNIA Incorporated August 5, 1903 Community of Homes

PUBLIC WORKS SERVICES

CONSTRUCTION - DEMOLITION
STANDPIPE INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1	12/29/06	3	
2		4	

SCALE: NOT TO SCALE

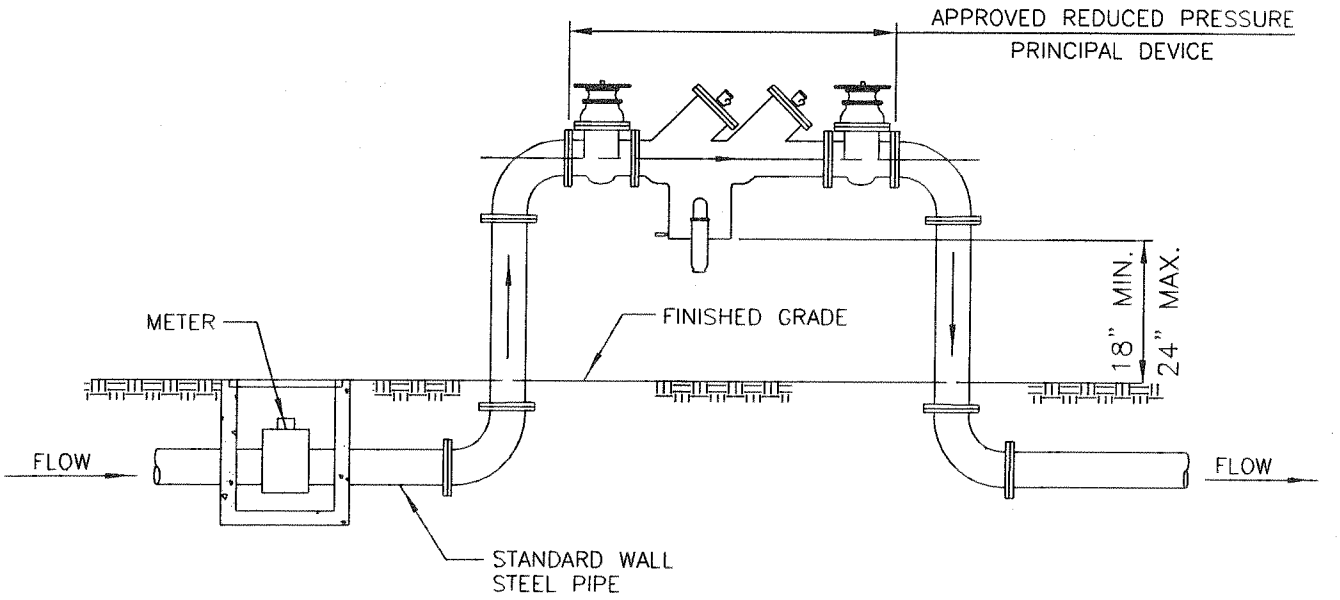
APPROVED: _____ 1/5/07
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39871 1/12/07
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

711

SHEET 1 OF 1



NOTES:

1. ALL BACKFLOW PREVENTION DEVICES SHALL BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA.
2. BACKFLOW PREVENTERS SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE METER AND NO CONNECTIONS SHALL BE MADE BETWEEN THE METER AND BACKFLOW PREVENTER.
3. WHEN INSTALLATION IS NEAR A BUILDING OR WALL, THE BACKFLOW PREVENTER SHALL BE ACCESSIBLE FOR TESTING, MAINTENANCE, REPAIR OR REPLACEMENT.
4. PIPING MATERIALS SHALL BE APPROVED BY THE PUBLIC WORKS SERVICES DEPARTMENT.
5. THE INSTALLATION WILL BE INSPECTED BY THE CITY BACKFLOW INSPECTOR PRIOR TO BEING PLACED IN SERVICE.
6. BACKFLOW PREVENTERS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE CITY PLANNING DEPARTMENT.

COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED 1903
PUBLIC WORKS SERVICES

BACKFLOW PREVENTION DEVICE
REDUCED PRESSURE PRINCIPLE

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

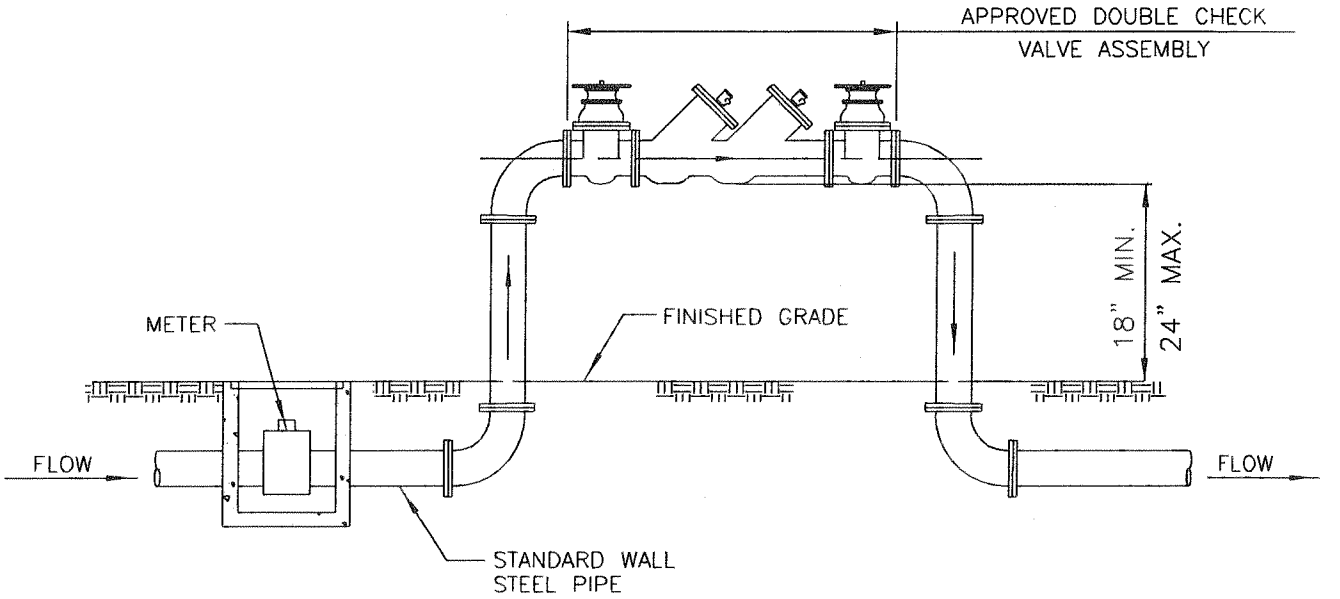
APPROVED: _____ 8/15/00
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: Stanley E. Schmidt 14527 7/27/00
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

712

SHEET 1 OF 1



NOTES:

1. ALL BACKFLOW PREVENTION DEVICES SHALL BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA.
2. BACKFLOW PREVENTERS SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE METER AND NO CONNECTIONS SHALL BE MADE BETWEEN THE METER AND BACKFLOW PREVENTER.
3. WHEN INSTALLATION IS NEAR A BUILDING OR WALL, THE BACKFLOW PREVENTER SHALL BE ACCESSIBLE FOR TESTING, MAINTENANCE, REPAIR OR REPLACEMENT.
4. PIPING MATERIALS SHALL BE APPROVED BY THE PUBLIC WORKS SERVICES DEPARTMENT.
5. THE INSTALLATION WILL BE INSPECTED BY THE CITY BACKFLOW INSPECTOR PRIOR TO BEING PLACED IN SERVICE.
6. BACKFLOW PREVENTERS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE CITY PLANNING DEPARTMENT.

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

BACKFLOW PREVENTION DEVICE
DOUBLE CHECK VALVE ASSEMBLY

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

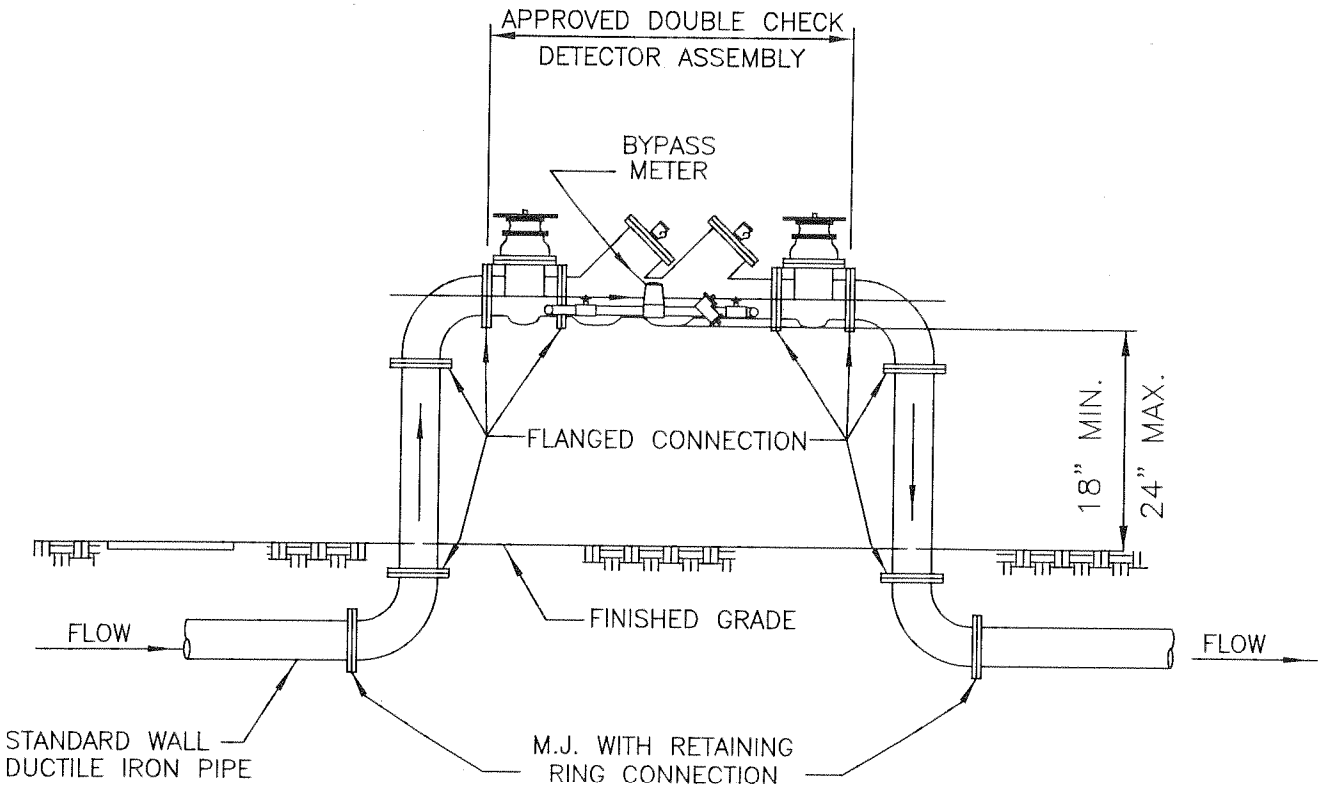
APPROVED: _____ 8/15/00
CITY OF ARCADIA-PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 14527 7/27/00
CITY OF ARCADIA - CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

713

SHEET 1 OF 1



NOTES:

1. BACKFLOW PREVENTION DEVICES SHALL BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA.
2. THE BYPASS METER ON THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL REGISTER IN CUBIC FEET(C.F.).
3. WHEN INSTALLATION IS NEAR A BUILDING OR WALL, THE BACKFLOW PREVENTER SHALL BE ACCESSIBLE FOR TESTING, MAINTENANCE, REPAIR OR REPLACEMENT.
4. PIPING MATERIALS SHALL BE APPROVED BY THE PUBLIC WORKS SERVICES DEPARTMENT- WATER SECTION.
5. THE INSTALLATION WILL BE INSPECTED BY THE CITY BACKFLOW INSPECTOR PRIOR TO BEING PLACED IN SERVICE.
6. BACKFLOW PREVENTERS SHALL BE SCREENED FROM PUBLIC VIEW AS REQUIRED BY THE CITY PLANNING DEPARTMENT.
7. THE BACKFLOW PREVENTER SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE CUSTOMER'S PROPERTY LINE, BUT NO CLOSER THAN 3 FEET, AND PARALLEL WITH THE PROPERTY LINE ADJACENT TO TO THE PUBLIC RIGHT OF WAY.

COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED 1903
PUBLIC WORKS SERVICES

BACKFLOW PREVENTION DEVICE
DOUBLE CHECK DETECTOR ASSEMBLY

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

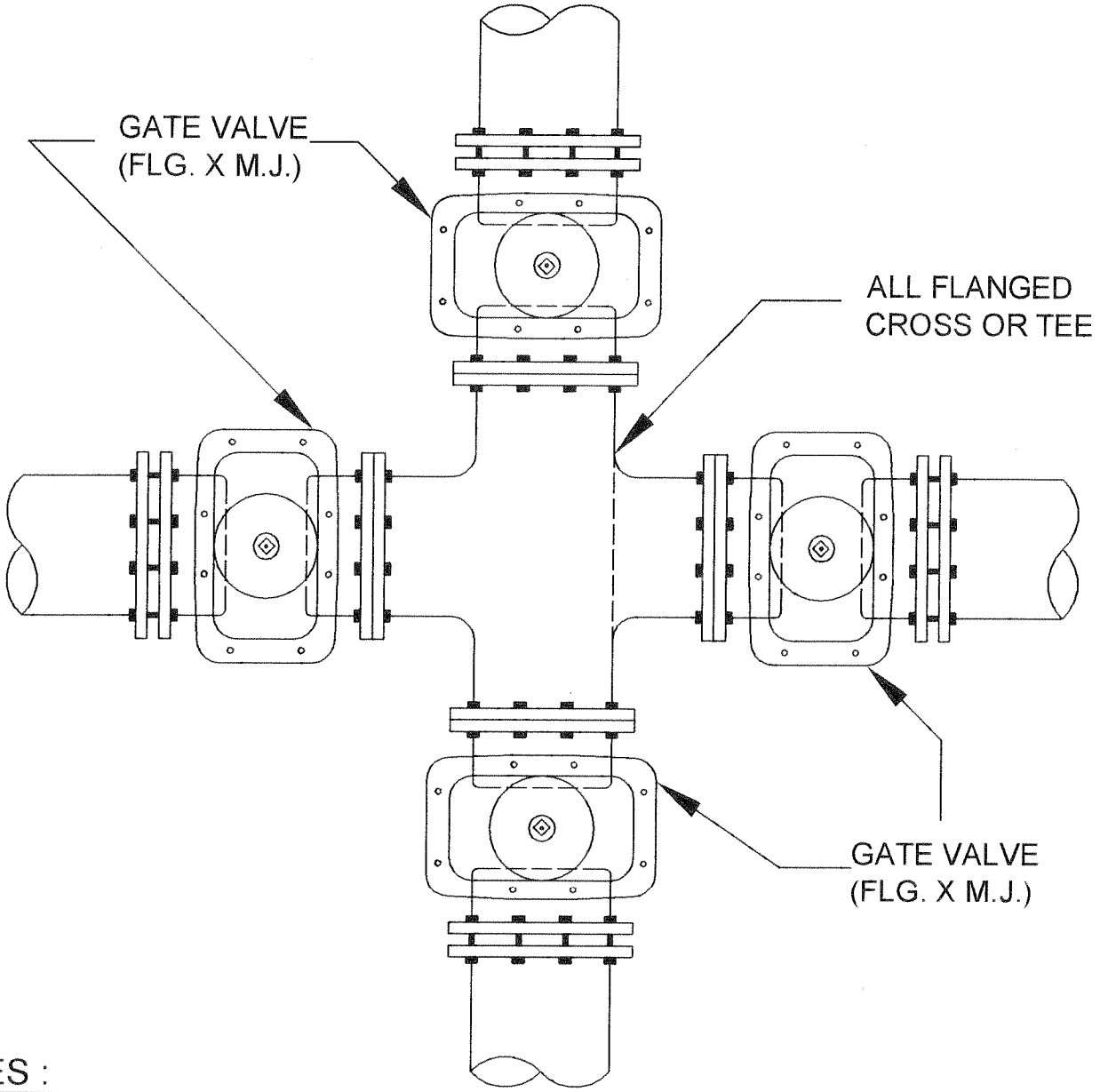
APPROVED: Pat Wallace 8/13/01
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR DATE

APPROVED: A E Acker 14527 8/16/01
CITY OF ARCADIA – CITY ENGINEER RCE No. DATE

STANDARD PLAN NUMBER

714

SHEET 1 OF 1



NOTES :

1. ALL WORK AND MATERIALS SHALL BE PER STANDARD NO. 700.
2. SEE STANDARD 708 FOR THRUST BLOCKS, STANDARD 715 FOR VALVE BOXES AND STANDARD 707 FOR VALVE ANCHOR BLOCKS.
3. UNDERGROUND CLAMPS SHALL BE INSTALLED ON ALL "TAKE-OFFS" AND/OR SIDE CONNECTIONS FOR FUTURE USE.
4. VALVES SHALL BE INSTALLED ON ALL LEGS OF CROSSES AND TEES.

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

STANDARD VALVE INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

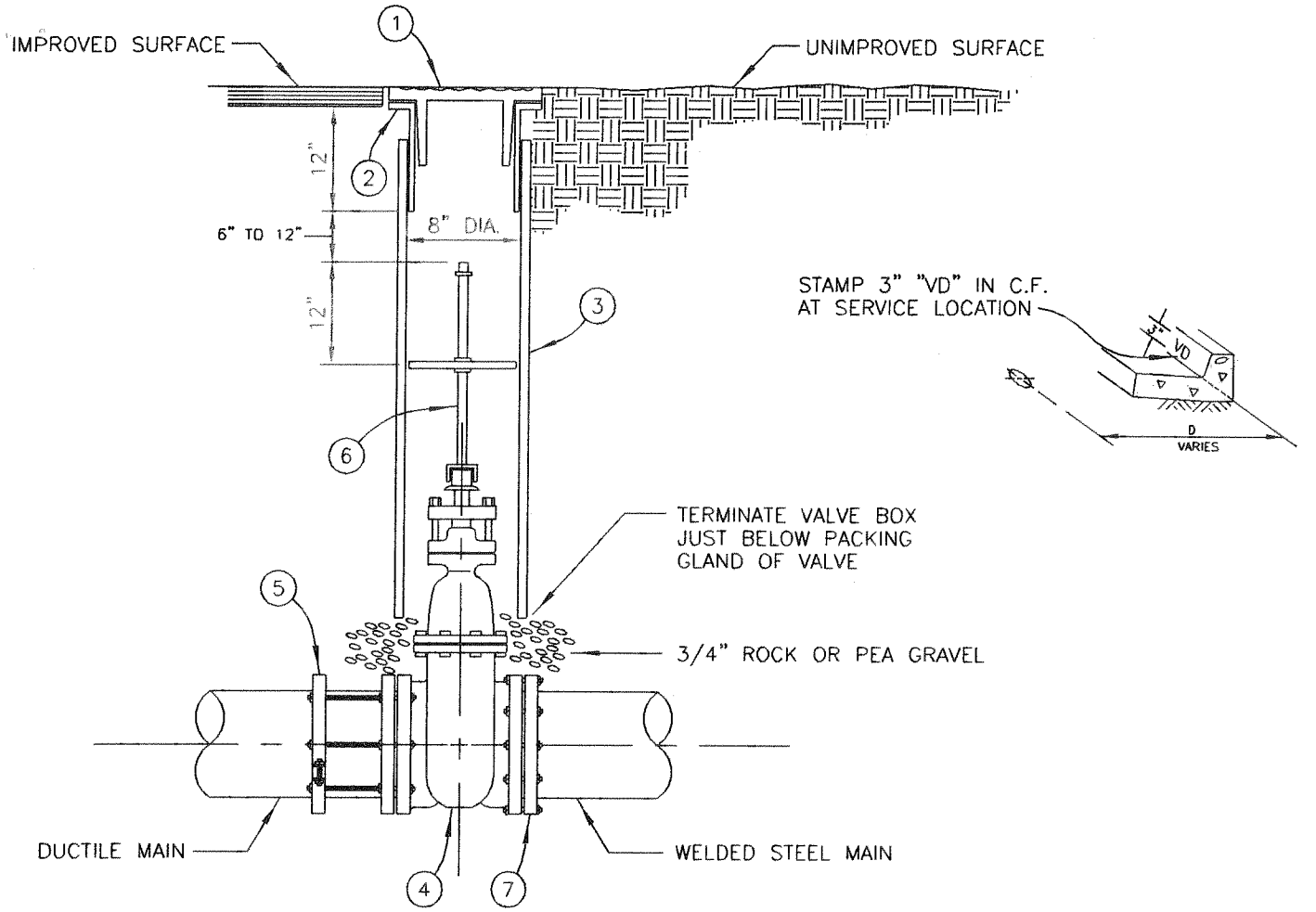
APPROVED: _____ 8/15/00
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 14527 7/27/00
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

716

SHEET 1 OF 1



NOTES

1. VALVE OPERATOR EXTENSION IS REQUIRED WHEN DEPTH TO VALVE OPERATOR EXCEEDS 5'. VALVE OPERATOR EXTENSION SHALL BE 18"–24" FROM FINISH SURFACE.
2. CONTRACTOR SHALL STAMP A 3" TALL "V" AND THE DISTANCE "D" FROM THE CURB FACE TO THE CENTER OF THE VALVE CAN.
3. SEE STANDARD DRAWING ARC. – FOR THRUST BLOCK REQUIREMENTS.

ITEM	DESCRIPTION	PART NO.
(1)	8" VALVE COVER STAMPED WATER AS SPECIFIED, CAST IRON, PAINTED BLUE	–
(2)	8" DIAMETER, 14 GAUGE, 18" LENGTH MIN. SLIP CAN, GALVANIZED	–
(3)	8" SCH. 80, PVC VALVE BOX	–
(4)	FLANGED OR MECHANICAL JOINT RESILIENT–SEATED GATE VALVE WITH 2" OPERATING NUT	–
(5)	THRUST RESTRAINT	–
(6)	VALVE OPERATOR EXTENSION, SEE STANDARD DRAWING ARC. – FOR INSTALLATIONS 5'–0" OR DEEPER	–
(7)	HEX HEAD BOLTS	

COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED 1903
PUBLIC WORKS SERVICES

GATE VALVE INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

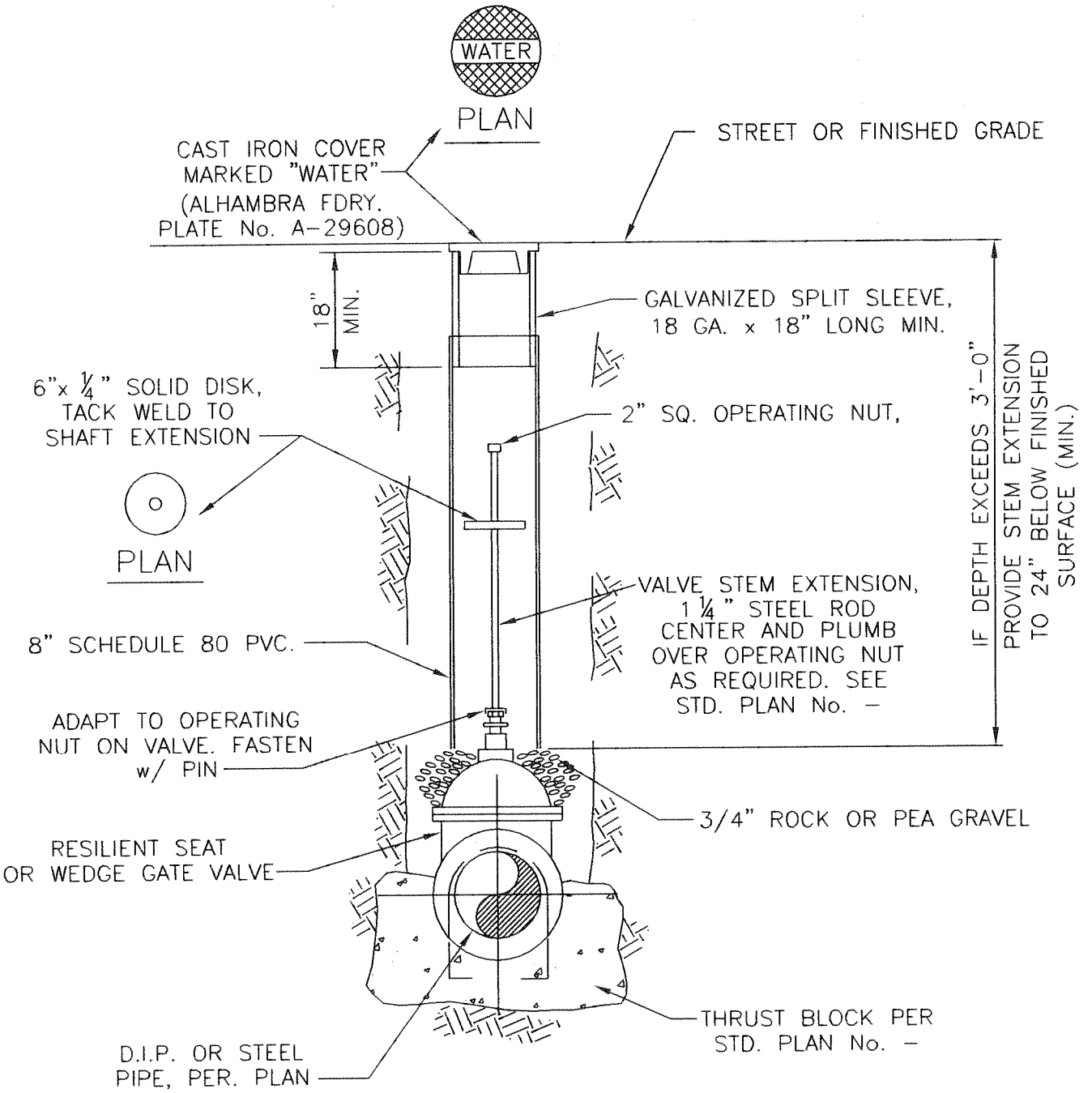
APPROVED: _____ 8/15/00
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: Stanley E Nelson 14527 7/27/00
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

717

SHEET 1 OF 1



COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

VALVE COVER ASSEMBLY AND VALVE STEM EXTENSION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

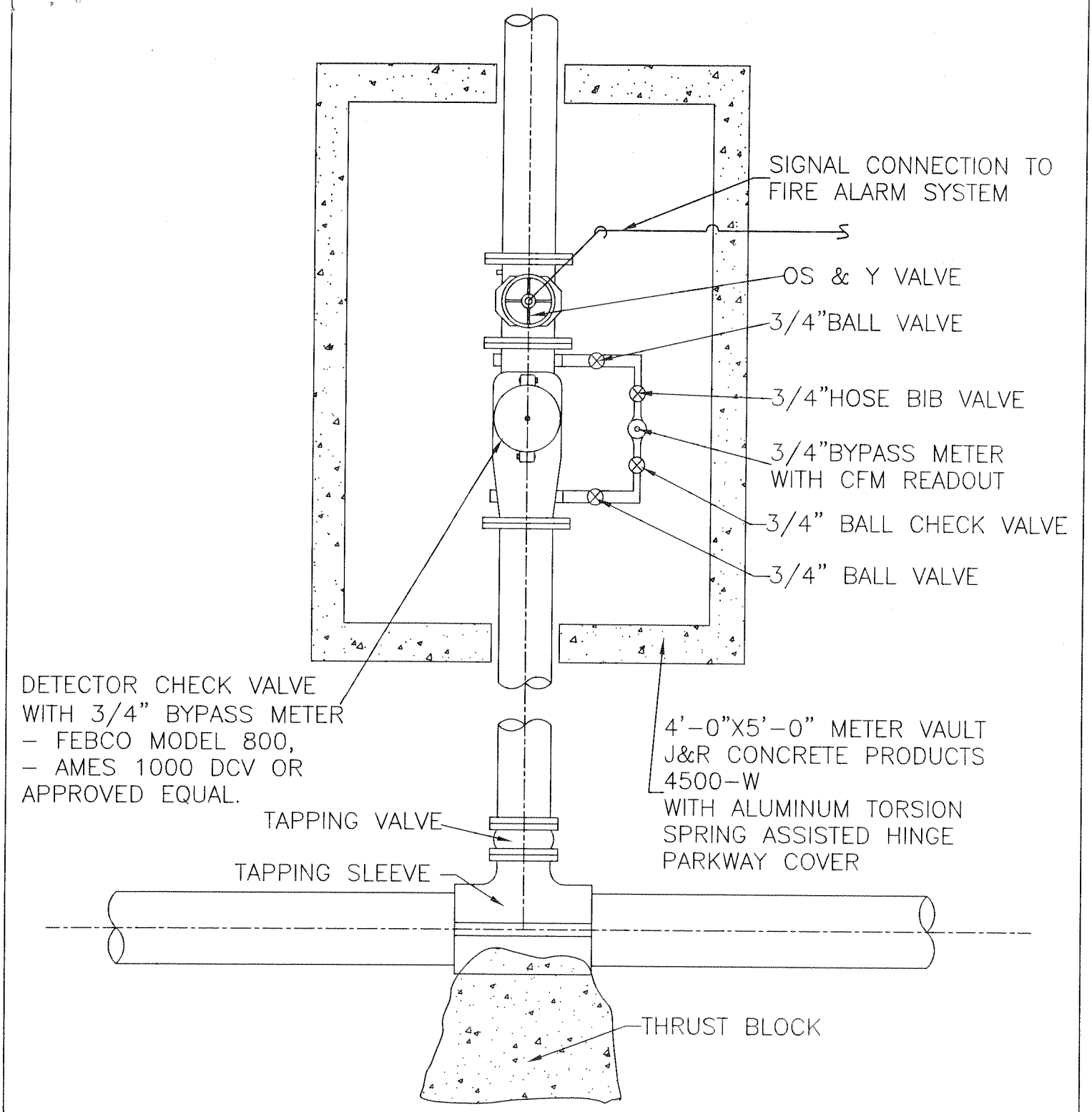
APPROVED: Patrick Alberg 8/9/00
CITY OF ARCADIA – PUBLIC WORKS SERVICES DIRECTOR DATE

APPROVED: Stanley E Schell 8/29/00
CITY OF ARCADIA – CITY ENGINEER RCE No. 14527 DATE

STANDARD PLAN NUMBER

718

SHEET 1 OF 1



COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED 1903

PUBLIC WORKS SERVICES

4" TO 10" DETECTOR CHECK VALVE FIRE CONNECTION INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

APPROVED: _____ 12/15/03
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

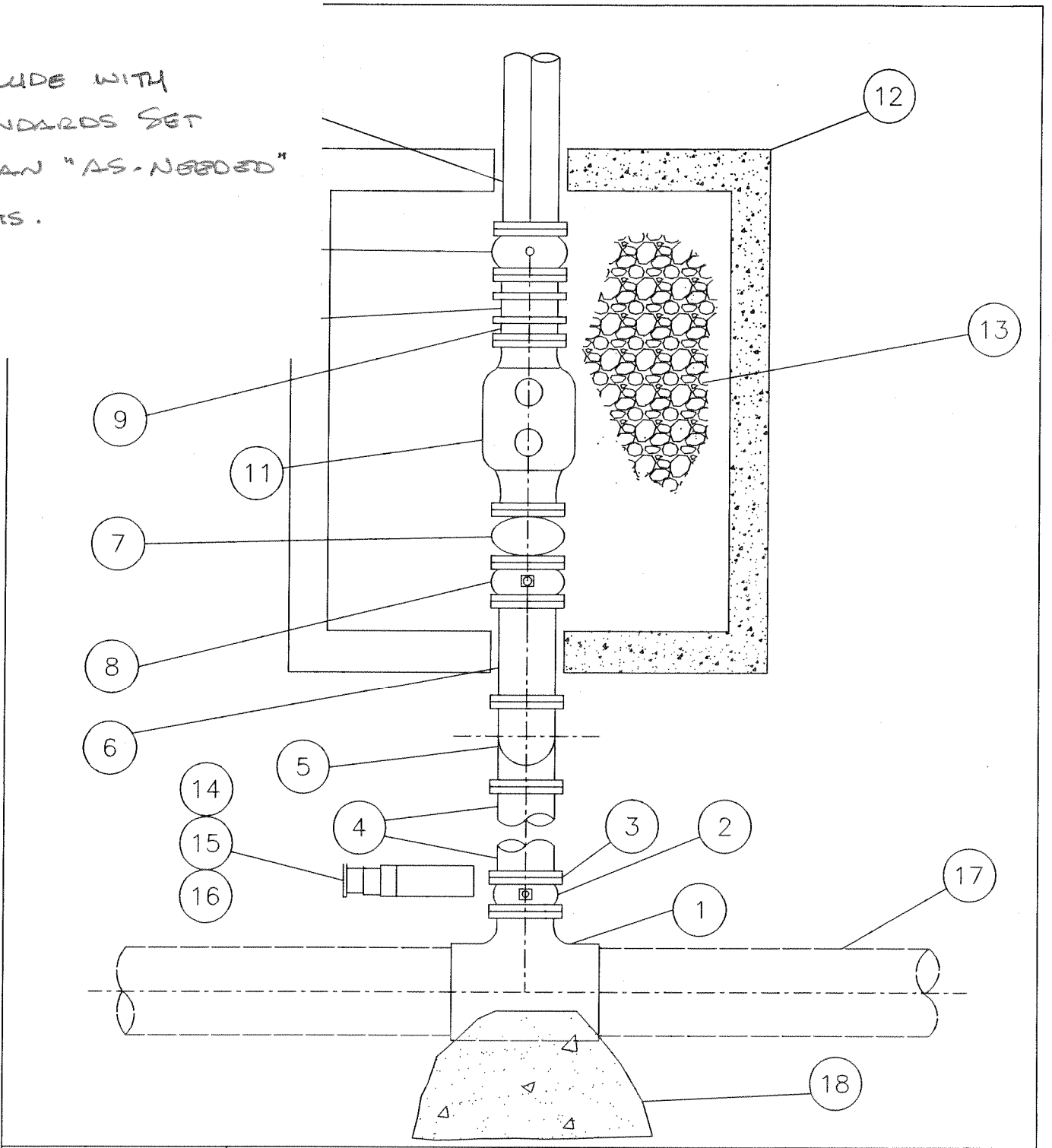
APPROVED: _____ 35971 12/15/03
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

719

SHEET 1 OF 1

INCLUDE WITH STANDARDS SET ON AN "AS-NEEDED" BASIS.



6" COMPOUND METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

APPROVED: _____ 7/19/04
CITY OF ARCADIA – PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 39971 7/19/04
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

720

SHEET 1 OF 2

NO.	DESCRIPTION	MAKE, MODEL OR MATERIAL
1.	(SIZE OF MAIN) x 6" M.J. x F.E. TEE OR (SIZE OF MAIN) x 6" M.J. x F.E. TAPPING SLEEVE	CAST IRON OR DUCTILE IRON PRESSURE CL. 300 (MIN.) OR STAINLESS
2.	6" M.J. x F.E. TAPPING VALVE OR (1)(2) 6" M.J. x F.E. GATE VALVE	AMERICAN FLOW CONTROL, CLOW, PRATT
3.	6" M.J. RETAINING GLAND WITH SET SCREWS	ROMAC OR GRIP TITE
4.	6" DUCTILE IRON PIPE (1)(2)	CLASS 52 OR PRESSURE CL.350 U.S. PIPE OR PACIFIC STATES
5.	6" x 18" M.J. OFFSET (IF NEEDED) (1)(2)	DUCTILE IRON, CL. 250
6.	6" x 16" MIN. F.E. x F.E. SPOOL	DUCTILE IRON, CL. 250
7	6" STRAINER	NEPTUNE 52000-201
8.	6" BUTTERFLY VALVE F.E. x F.E.	SHORT - BODY, CLASS 150
9.	6" x 20" NIPPLE (CUT TO FIT FLEX. CPLG.)	BRASS - PRATT, CLOW
10.	6" FLEX. COUPLING	ROMAC, SMITH BLAIR, FORD
11.	6" COMPOUND METER	NEPTUNE TRU/FLO®
12.	4'-0" x 6'-6" CONCRETE VAULT W/TRAFFIC-RATED COVER	JENSEN K466-H-48-08T
13.	OPEN BOTTOM - 6" THICK CAB LAYER EXTEND 6" BEYOND VAULT ALL AROUND	3/4" CRUSHED AGGREGATE BASE
14.	8" VALVE CAP	CAST IRON (WATER) SEE NOTES
15.	8" DIA. VALVE CAN	SCH 40 PVC
16.	8" DIA. x 18" VALVE SLEEVE	14-GAUGE GALVANIZED STEEL
17.	NEW OR EXISTING WATER MAIN	SEE PLAN
18.	THRUST BLOCK	SEE STANDARD 710

(1) MECHANICAL JOINTS WITH RESTRAINING RINGS MAY BE USED INSTEAD OF FLANGED JOINT WHERE PRACTICAL.
(2) ALL PIPE AND FITTING JOINTS SHALL BE FLANGED OR RESTRAINED MECHANICAL JOINTS WITHIN A MINIMUM DISTANCE OF 30 FEET UPSTREAM, OR DOWNSTREAM OF THE VAULT.

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED 1903

PUBLIC WORKS SERVICES

6" COMPOUND METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE
1		3	
2		4	

SCALE: NOT TO SCALE

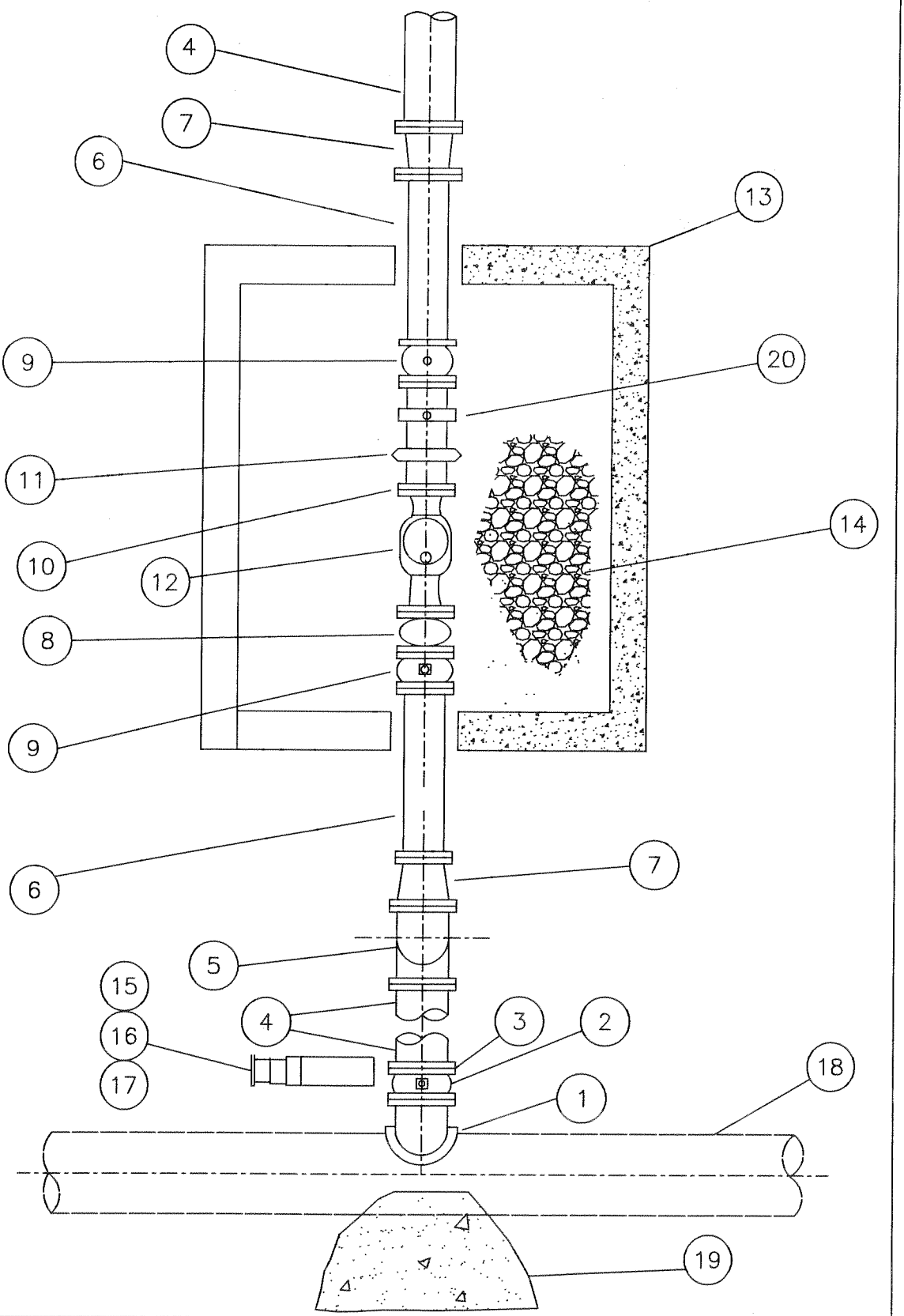
APPROVED: _____ 7/19/04
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR — DATE

APPROVED: _____ 35971 7/19/04
CITY OF ARCADIA – CITY ENGINEER — RCE No. — DATE

STANDARD PLAN NUMBER

720

SHEET 2 OF 2



8" TURBINE METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE

SCALE: NOT TO SCALE

STANDARD PLAN NUMBER

721

SHEET 1 OF 2

APPROVED: _____ 12/14/04
CITY OF ARCADIA–PUBLIC WORKS SERVICES DIRECTOR DATE

APPROVED: _____ 3697 12/14/04
CITY OF ARCADIA – CITY ENGINEER RCE No. DATE

COMMUNITY OF HOMES
CITY OF ARCADIA
INCORPORATED-1903
PUBLIC WORKS SERVICES

NO.	DESCRIPTION	MAKE, MODEL OR MATERIAL (4)
1.	(SIZE OF MAIN) x 10" F.E. TAPPING TEE (3)	KOPPL CN-100 WELD NOZZLE W/REINFORCING COLLAR PLATE
2.	10" M.J. x F.E. TAPPING VALVE OR (1)(2) 10" M.J. x F.E. GATE VALVE	DUCTILE IRON, CL 250
3.	10" M.J. RETAINING GLAND WITH SET SCREWS	ROMAC OR GRIP TITE
4.	10" DUCTILE IRON PIPE (1)(2)	THICKNESS CLASS 52
5.	10" x 18" M.J. OFFSET (IF NEEDED) (1)(2)	DUCTILE IRON, CL. 250
6.	8" x 36" MIN. P.E. x F.E. SPOOL	DUCTILE IRON, CL. 250
7.	10" x 8" MJ REDUCER	DUCTILE IRON, CL. 250
8.	8" STRAINER	NEPTUNE, ENVIROBRASS II
9.	8" GATE VALVE F.E. x F.E.	DUCTILE IRON, CL 250
10.	8" x 20" SPOOL (CUT TO FIT VICTAULIC COUPLING)	DUCTILE IRON, CLASS 250
11.	6" VICTAULIC COUPLING	ROMAC, SMITH BLAIR, FORD
12.	8" TURBINE METER	NEPTUNE HP TURBINE
13.	6' x 8' CONCRETE VAULT W/TRAFFIC-RATED COVER	JENSEN PRECAST, W-68 SERIES W/2 PIECE SPRING ASSISTED TRAFFIC FRAME AND COVER
14.	OPEN BOTTOM - 6" THICK CAB LAYER EXTEND 6" BEYOND VAULT ALL AROUND	3/4" CRUSHED AGGREGATE BASE
15.	8" VALVE CAP	CAST IRON (WATER)
16.	8" DIA. VALVE CAN	SCH 40 PVC
17.	8" DIA. x 18" VALVE SLEEVE	14-GAUGE GALVANIZED STEEL
18.	NEW OR EXISTING WATER MAIN	SEE PLAN
19.	THRUST BLOCK	SEE STANDARD 710
20.	2" SERVICE SADDLE WITH 2" X 3" BRASS NIPPLE AND 2" BRASS BALL VALVE FIP X FIP	SMITH BLAIR, ROMAC, FORD

(1) MECHANICAL JOINTS WITH RESTRAINING RINGS MAY BE USED INSTEAD OF FLANGED JOINT WHERE PRACTICAL.
(2) ALL PIPE AND FITTING JOINTS SHALL BE FLANGED OR RESTRAINED MECHANICAL JOINTS WITHIN A MINIMUM DISTANCE OF 30 FEET UPSTREAM, OR DOWNSTREAM OF THE VAULT.
(3) ALL FIELD WELDING SHALL CONFORM TO AWWA STANDARD C-206
(4) FOR SPECIFICATIONS OF STANDARD ITEMS REFER TO ARCADIA WATER STANDARD PLAN NO. 700

COMMUNITY OF HOMES — CITY OF ARCADIA — INCORPORATED-1903
PUBLIC WORKS SERVICES

8" TURBINE METER INSTALLATION

REVISIONS:	DATE	REVISIONS:	DATE

SCALE: NOT TO SCALE

APPROVED: _____ 12/16/04
CITY OF ARCADIA-PUBLIC WORKS SERVICES DIRECTOR — DATE

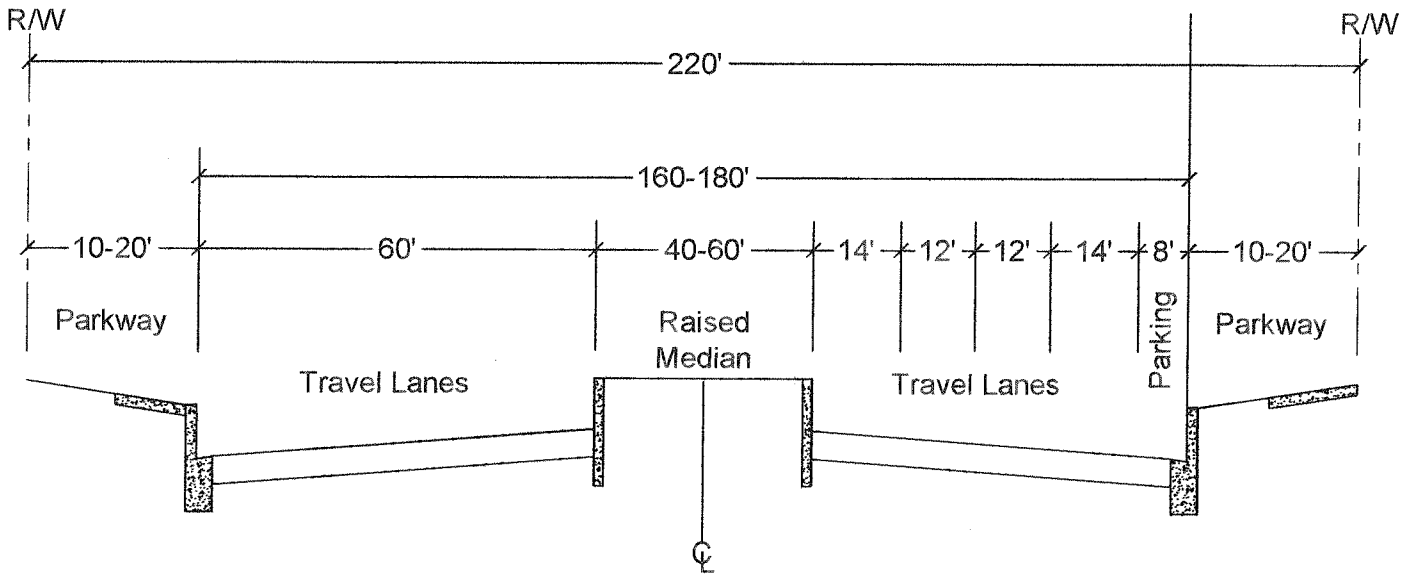
APPROVED: _____ 12/14/04
CITY OF ARCADIA - CITY ENGINEER — RCE No. 35571 — DATE

STANDARD PLAN NUMBER
721

SHEET 2 OF 2

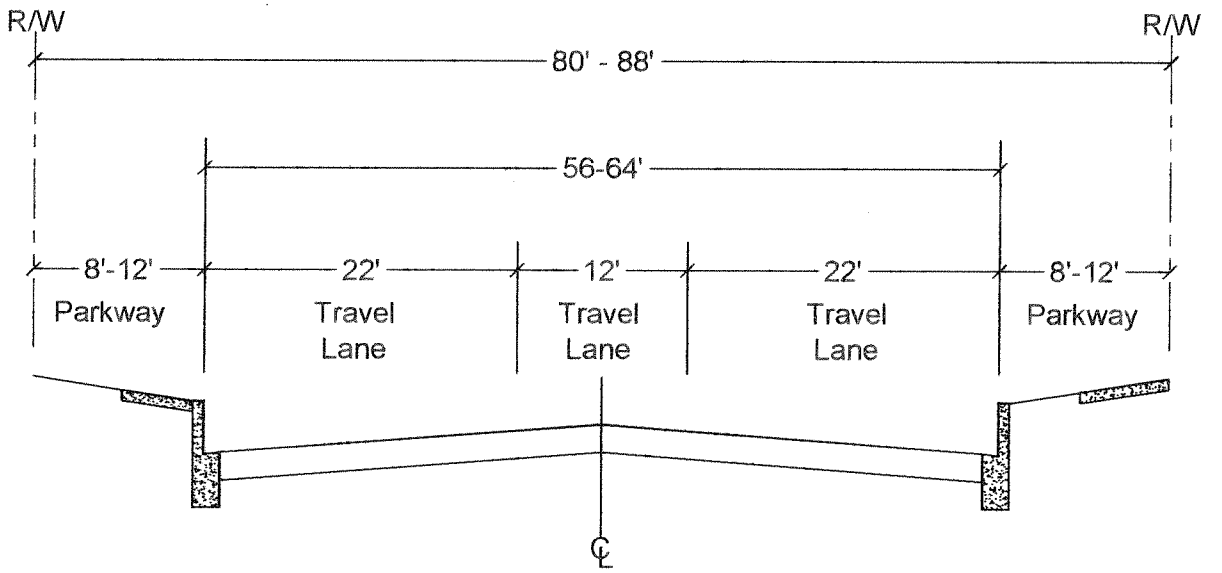
INDEX OF STANDARDS PLANS

SECTION 800



MAJOR ARTERIAL

NTS



MAJOR ARTERIAL - MODIFIED ONE WAY

NTS

MAJOR ARTERIAL TYPICAL SECTIONS

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

38971

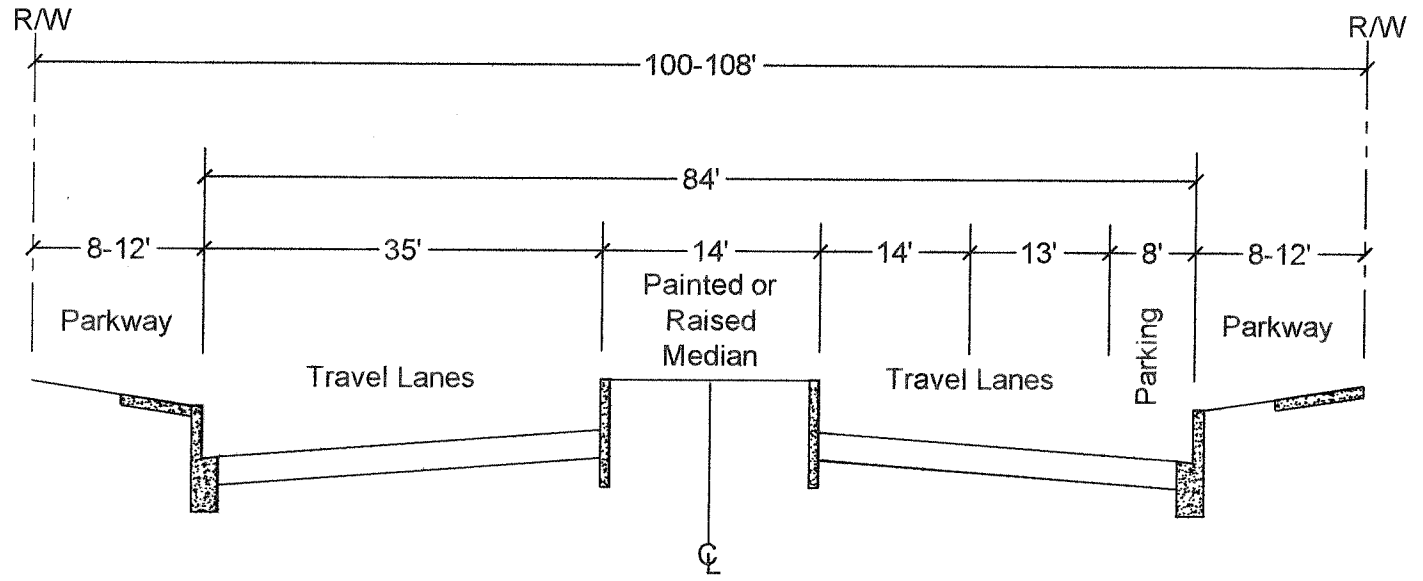
CITY ENGINEER — RCE

DATE:	SCALE:	DRAWN BY:
5/25/04	NONE	RSG

STANDARD DRAWING

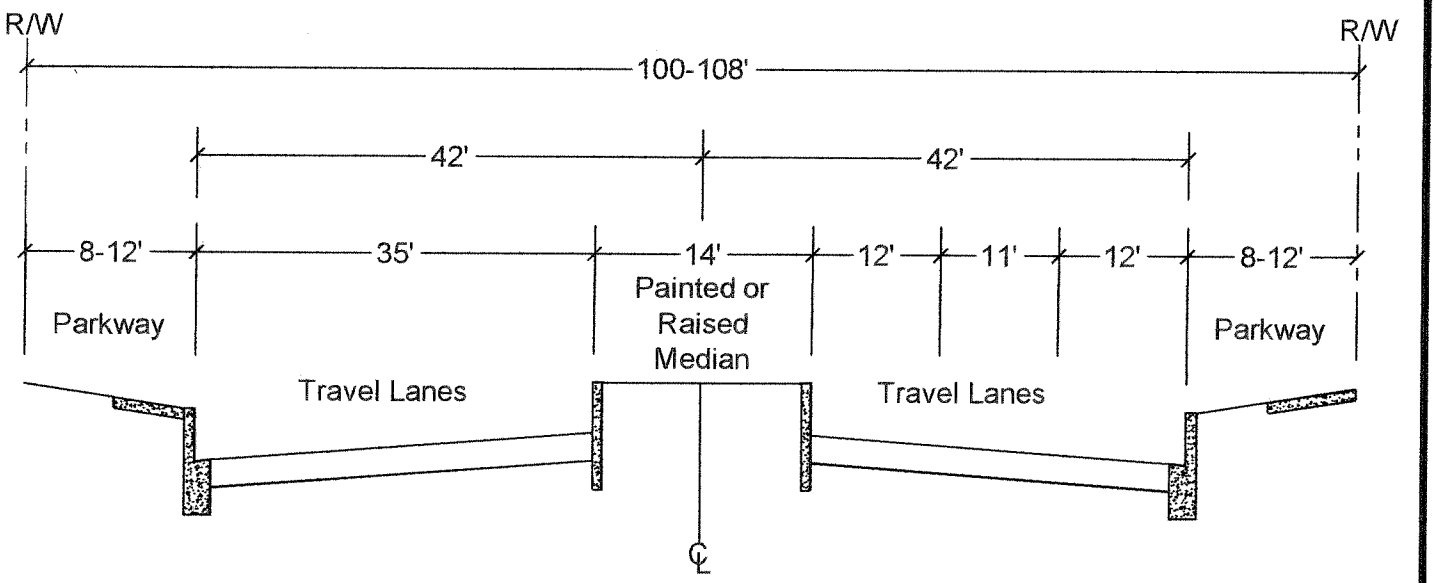
800 - 1

SHEET 1 OF 1



PRIMARY ARTERIAL

NTS



PRIMARY ARTERIAL - MODIFIED FOR 6 TRAVEL LANES

NTS

PRIMARY ARTERIAL TYPICAL SECTIONS

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

Phil Wu — CITY ENGINEER

38971 — RCE

DATE: 5/25/04

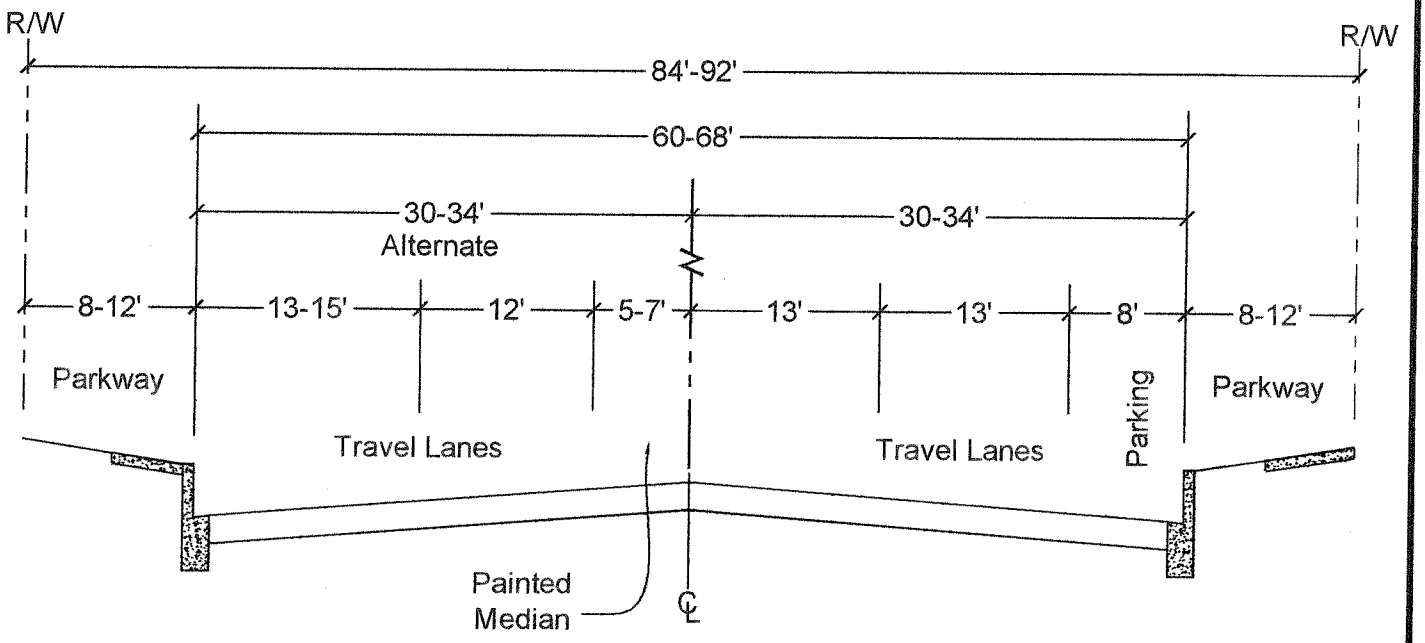
SCALE: NONE

DRAWN BY: RSG

STANDARD DRAWING

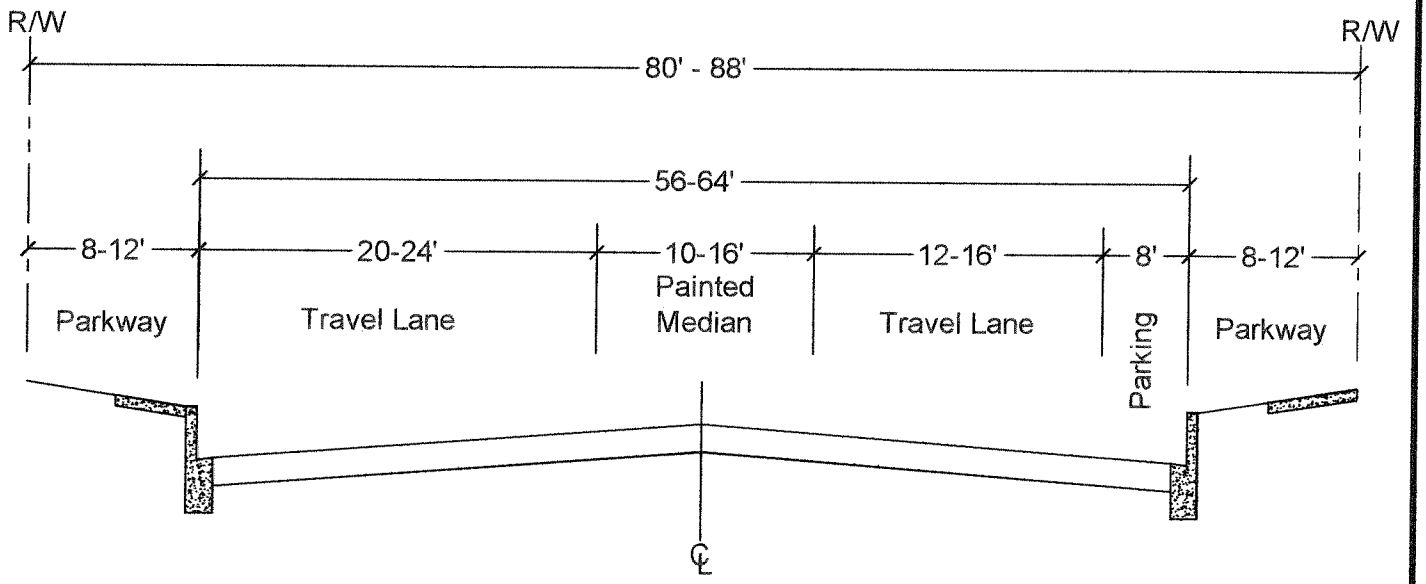
800 - 2

SHEET 1 OF 1



SECONDARY ARTERIAL

NTS



SECONDARY ARTERIAL - MODIFIED FOR 2 TRAVEL LANES

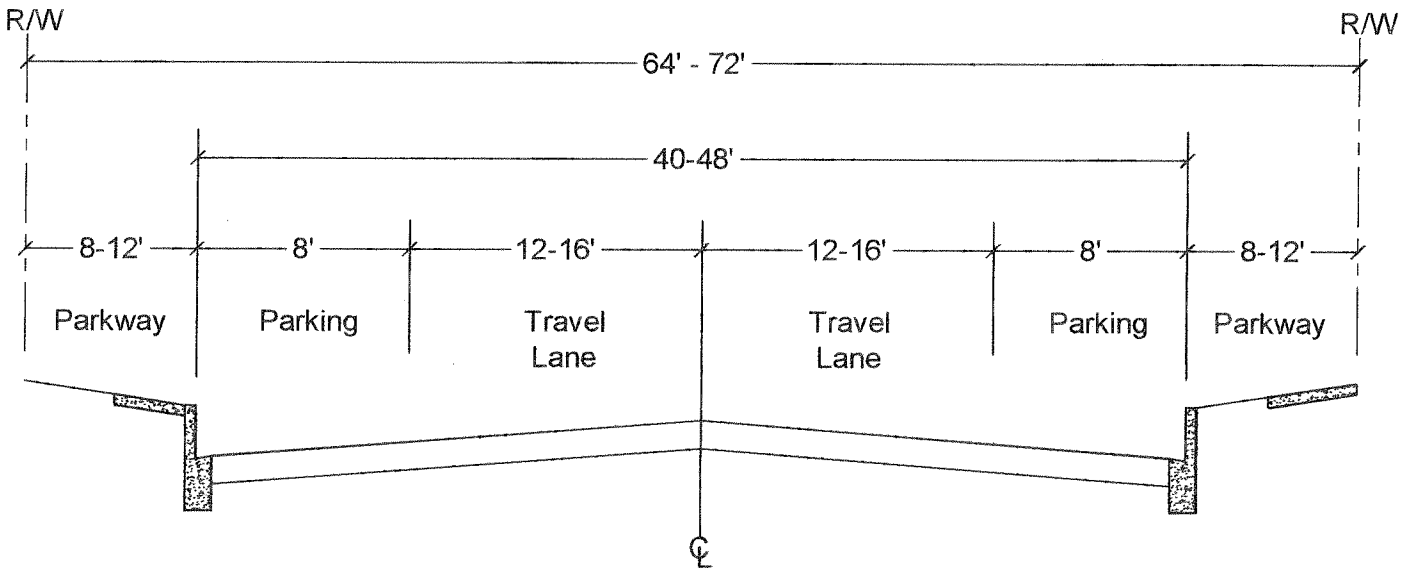
NTS

SECONDARY ARTERIAL TYPICAL SECTIONS

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

CITY ENGINEER	38971 RCE	STANDARD DRAWING
DATE: 5/25/04	SCALE: NONE	DRAWN BY: RSG
		800 - 3
		SHEET 1 OF 1



COLLECTOR

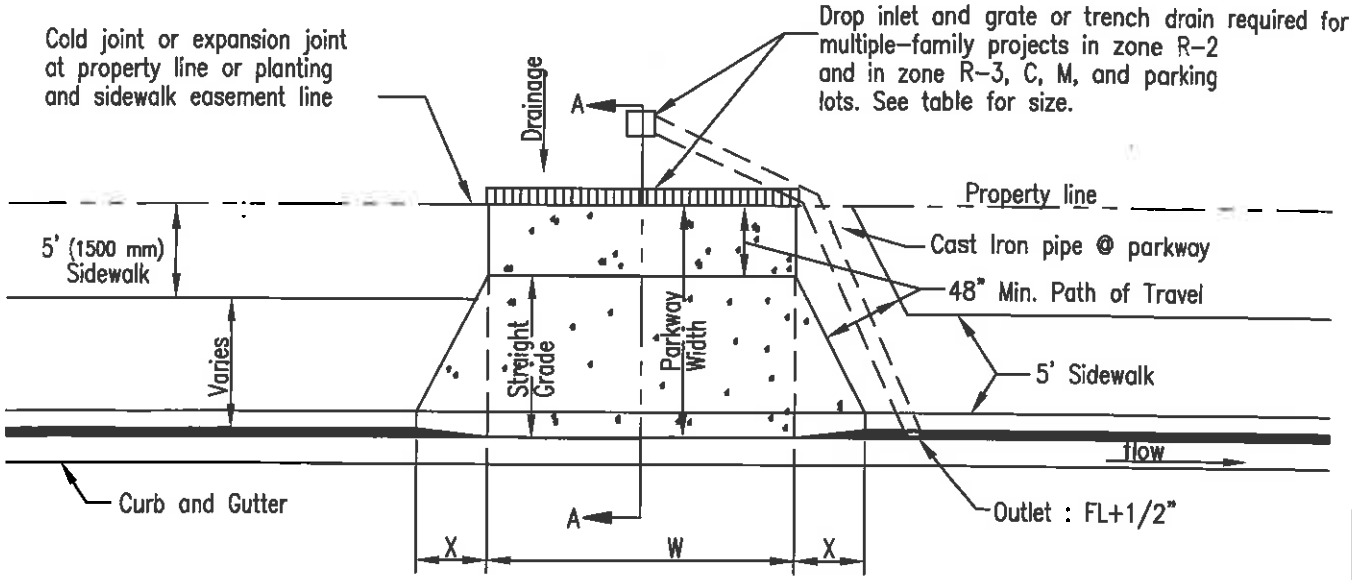
NTS

COLLECTOR TYPICAL SECTION

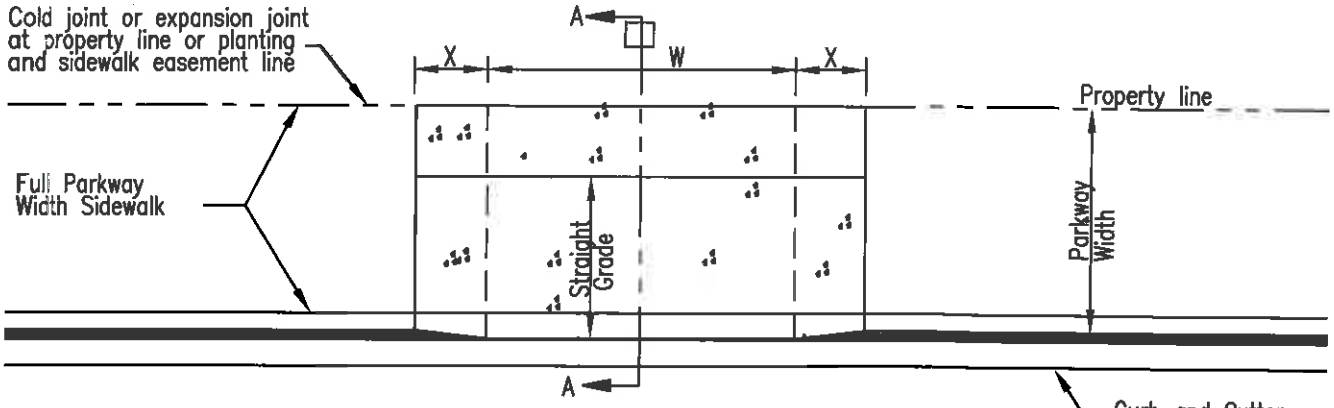
CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

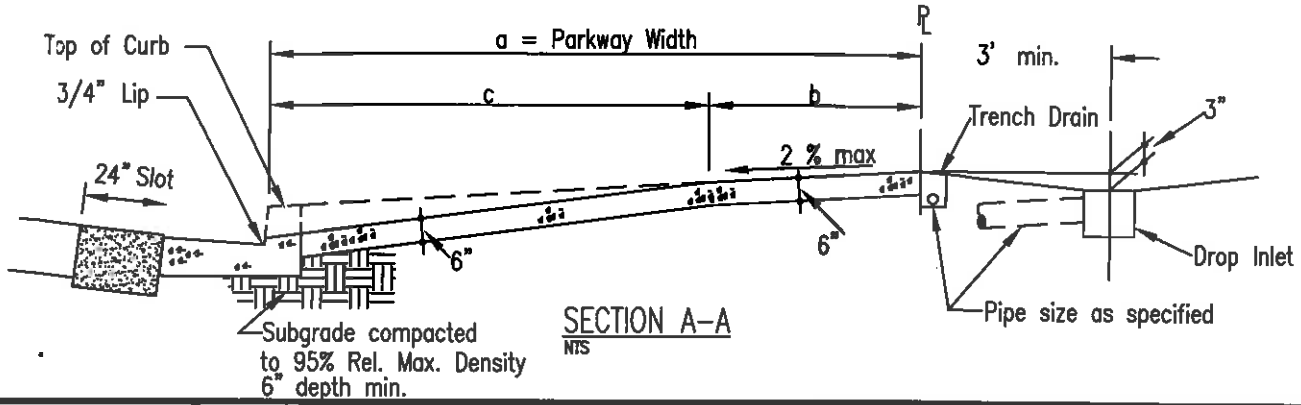
CITY ENGINEER	38971 RCE		STANDARD DRAWING 800 - 4
DATE: 5/25/04	SCALE: NONE	DRAWN BY: RSG	SHEET 1 OF 1



SINGLE / MULTI – FAMILY RESIDENTIAL DRIVEWAY
NTS



COMMERCIAL / MULTI – FAMILY DRIVEWAY
NTS



SECTION A-A
NTS

DRIVEWAY APRONS

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

DATE:	SCALE:	DRAWN BY:
2/11/2015	NONE	AG/JC

STANDARD DRAWING
801 - 1
SHEET 1 OF 3

CURB FACE	6" or less	7"	8"	9"	10"	11"	12" or more
X	3'	3.5'	4'	4.5'	5'	5.5'	6'

a	b	c
7'	0' *	7'
10'	4	6'
12'	5'	7'
13'6"	5'6"	8'
14'	5'6"	8'6"
15'	5'6"	9'6"
20'	10'6"	9'6"

Pipe size as specified

Max. Drainage Area (ft^2)	C.I. Pipe	Grate Size
4,000	4"	12"x12"
11,000	6" 2–4"	14"x14"
24,000	8" 2–4"	24"x24"

* – Where sidewalk exists or is proposed, additional sidewalk and dedication/easement beyond the existing right–of–way shall be required.

DRIVEWAY APRONS

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

DATE: 2/11/2015 | SCALE: NONE | DRAWN BY: AG/JC

STANDARD DRAWING 801 - 1

SHEET 2 OF 3

PARKWAY IMPROVEMENT SPECIFICATIONS FOR STANDARD DRIVEWAYS, SIDEWALKS, CURBS AND GUTTERS

1. All new and replacement driveway aprons shall be constructed in conformance with the City's adopted ADA Sidewalk Transition Plan.

2. All driveways shall be constructed of standard Portland cement concrete 6 inches thick to the property line. Variation in material from Portland cement concrete shall be in conformance with the City's policy on driveway apron materials available in the office of the City Engineer.

3. Sidewalk shall be constructed of Portland cement concrete 4 inches thick, and shall have a uniform slope of 2% max to the top of existing curb. Variation of material shall not be permitted.

4. All concrete shall comply with Section 201-1 of Standard Specifications for Public Works Construction, latest Edition, and conform to the following:

   Concrete Class 520-C-2500. Slope apron shall be broom finish. Balance shall be troweled smooth between sidewalk lines. Sidewalk scoring lines shall correspond with scoring lines in the adjacent sidewalk or shall be spaced at 30 inches both ways. Scoring lines on new curb shall be on 30 inches centers, continuous across the top of curb and down the face to within 2 inches of the flow line. Expansion joints in the sidewalk shall be constructed every 20 feet. Expansion joints in the curb and gutter shall be constructed as follow: Every 60 feet at the ends of curb returns and at each side of structures.

5. For parkways less than ten (10) feet wide, sidewalk passage around the driveway apron suffficient to meet ADA standards cannot be achieved. Per the City's adopted Sidewalk Transition Plan, additional dedication/easement shall be required to accomodate minimum acceptable sidewalk.

6. Reference is made to City of Arcadia Standard Drawing 801-1. The width of a driveway shall be interpreted as extending or to be (w). The maximum width (w) for residential driveways shall be 20 feet for single family and 25 feet for multi-family. The maximum width (w) for commercial driveways shall be 35 feet. The maximum width for all single and multi-family residential common driveways shall not exceed 30 feet. When more than one driveway serves a given non-residential property, the width (w) of all driveways shall not exceed 70% of the width of the property as measured along the street side property line where said driveways are located. The minimum width (w) for driveways shall 12½ feet for multi-family and 12 feet for all others.

7. The entire driveway, including the slopes of "X" distances, shall lie entirely in front of the lot which it is to serve. No portion of a driveway shall be permitted in the curvature of a curb return at street intersections. No driveway shall be constructed nearer than 3 feet from any fire hydrant, ornamental light standard, telephone or electric pole, meter box or underground vault or manhole.

8. Where required, frames and grates are to be traffic weight, equal to Alhambra Foundry #A2012. Only cast iron pipes will be permitted in the parkway. Rectangular cast iron pipe may be used where curb face is shallow and shall be equal in area to required round pipe.

9. In cases where a street carries an unusual amount of storm water, the lower side of driveway shall have a raised curb, if deemed necessary by the Street Superintendent. Where an auxiliary curb has been constructed above the established curb grade, as a protection against storm water, no driveway will permitted.

10. Permit must be obtained from Development Services Department Engineering Division before start of any off-site improvement work. Necessary permit fee will be charged to cover inspection costs.

11. Depressed curb and gutter portion of driveway shall be completed within three (3) days after curb is removed. At all times curb opening shall be protected to prevent street water from entering and damaging street paving. Debris is to be removed within three (3) days after completing of the driveway.

12. Subgrade shall be prepared in accordance with Section 301 of Standard Specifications for Public Works Construction, latest Edition.

13. Curb and Gutter shall be replaced with new driveway approach.

14. Flat cutting of curb shall not be allowed

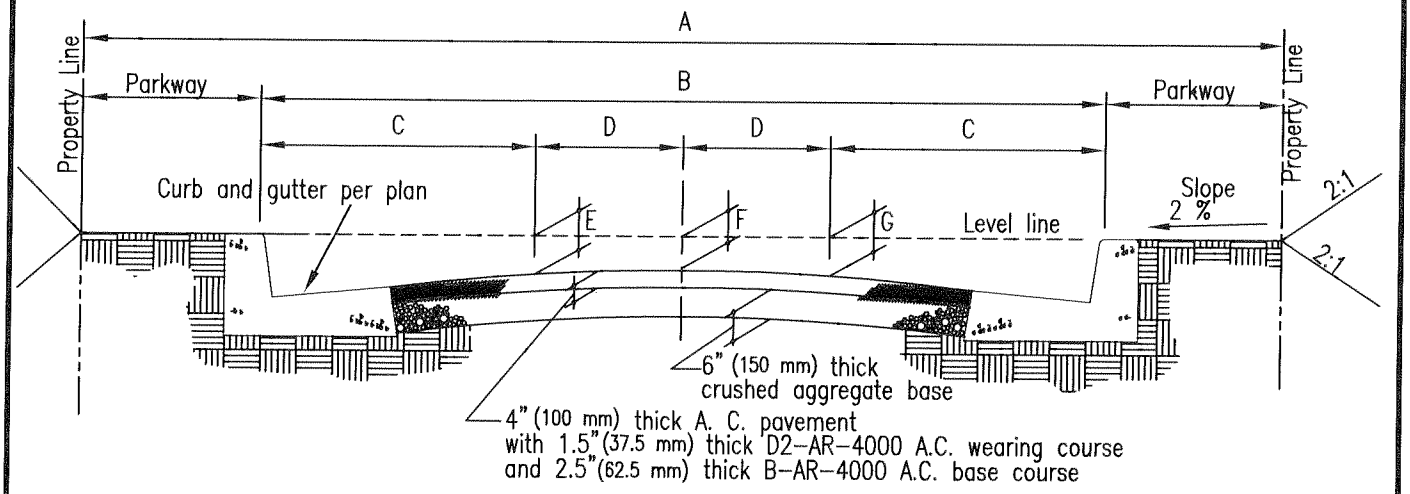
DRIVEWAY APRONS

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

DATE:	SCALE:	DRAWN BY:
2/11/2015	NONE	AG/JC

STANDARD DRAWING
801 - 1
SHEET 3 OF 3

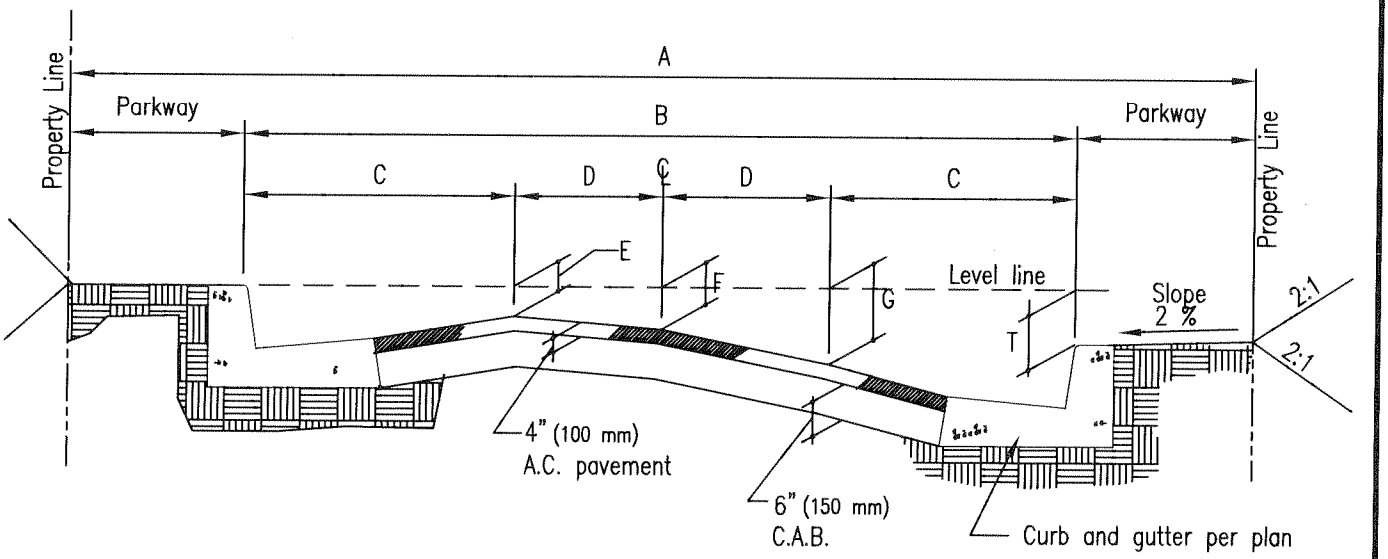


STANDARD CROSS SECTION

NTS

C.F.	A	B	C	D	E	F	G
6" (150 mm)	60' (1800 mm)	36' (10800mm)	9' (2700 mm)	9' (2700 mm)	1½" (37.5 mm)	0 (0 mm)	1½" (37.5 mm)
8" (200 mm)	60' (1800 mm)	36' (10800mm)	9' (2700 mm)	9' (2700 mm)	3½" (87.5 mm)	2" (50 mm)	3½" (87.5 mm)
8" (200 mm)	60' (1800 mm)	40' (12000mm)	10' (3000 mm)	10' (3000 mm)	3½" (87.5 mm)	2" (50 mm)	3½" (87.5 mm)

Dimensions shown on this plan for English units and Metric units are not exactly equal values. If English units are used, all values used for construction shall be English values. If Metric units are used, all values used for construction shall be metric values.



TILT CROSS SECTION

NTS

C.F.	A	B	C	D	T	E	F	G
6" (150 mm)	60' (18000mm)	36' (10800mm)	9' (2700 mm)	9' (2700 mm)	6" (150 mm)	2" (50 mm)	5" (175 mm)	9" (225 mm)
8" (200 mm)	60' (18000mm)	36' (10800mm)	9' (2700 mm)	9' (2700 mm)	9" (225 mm)	4" (100 mm)	7" (125 mm)	11" (275 mm)
To be used w/ 8" (200 M) C. F. only →					12" (300 mm)	4" (100 mm)	8" (200 mm)	13" (325 mm)

SUBDIVISION STREET CROSS SECTIONS

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

STANDARD DRAWING

800 - 5

SHEET 1 OF 1

CIRCULAR DRIVEWAY STANDARDS

EFFECTIVE MAY, 2003

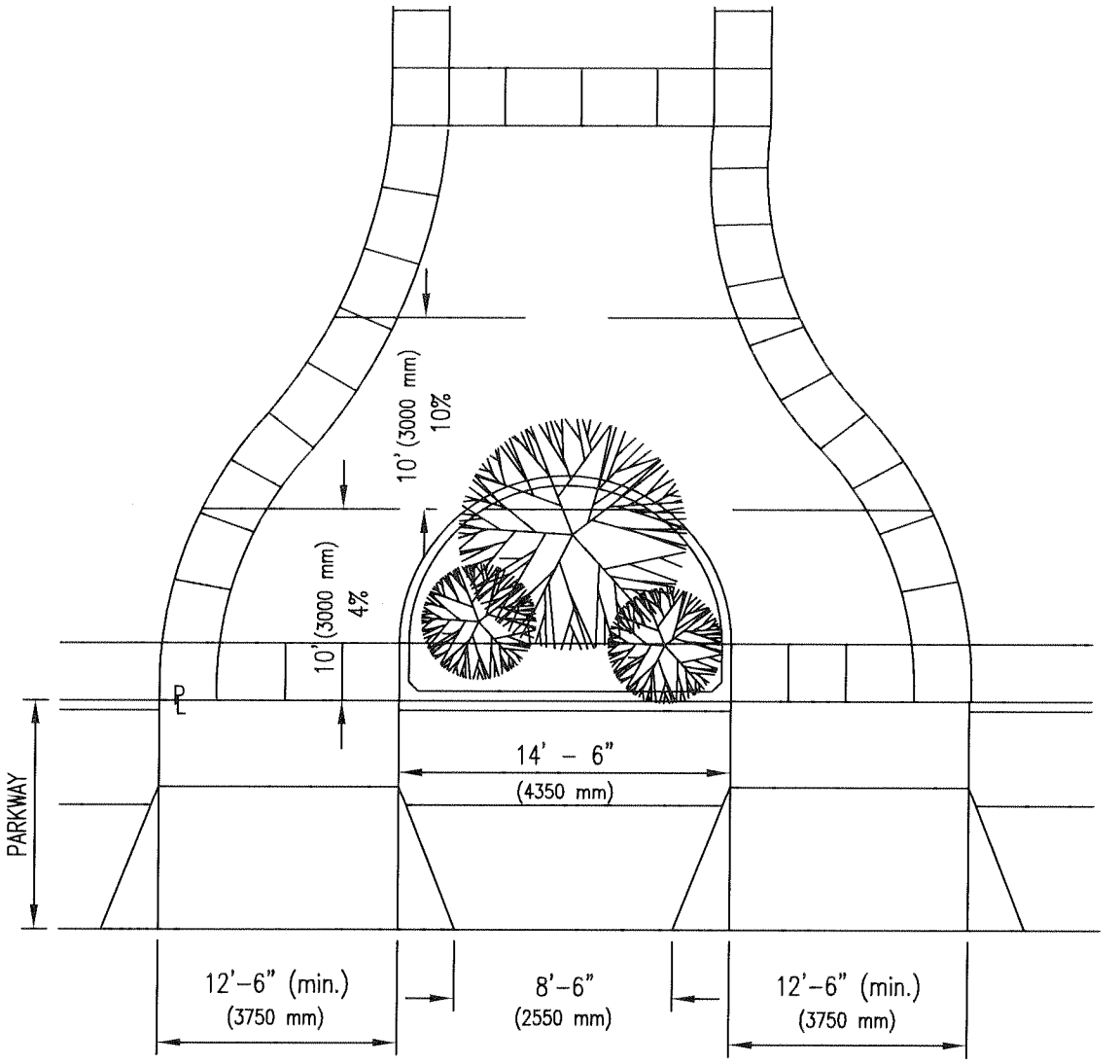
9252.2.6.1. CIRCULAR DRIVEWAYS

Lots with street frontage of 75'-0" or greater are eligible for circular driveways. On lots with more than one (1) street frontage, a circular driveway shall be located on the street frontage that is 75'-0" or greater; provided, however, that not more than one circular driveway shall be allowed for any one lot. The circular driveway shall not have a width greater than fifteen (15) feet and the furthest point from the street of the circular driveway measured from the side of the circular driveway closest to the street shall be a minimum of twenty-five (25) feet measured perpendicular from the property line on the street to the furthest distance of the inside edge of the circular driveway.

Pedestrian walkways and vehicular accessways shall not occupy more than forty percent (40%) of the required front yard or street side yard setback.

Exception: The Modification Committee, pursuant to the modification regulations may grant a modification to allow a circular driveway on a lot with street frontage of less than 75'-0".

(Adopted by CC Ordinance 2173, 5/03)



The Minimum on-site driveway width for a circular driveway, which will serve access to a multiple - family project, is 12' - 6".

A safety island with no less than 8'-6" of full height curb shall be provided between the driveways serving the same property.

CIRCULAR DRIVEWAY APRONS

(Multi-Family Residential)

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPT. - ENGINEERING DIV.

CITY ENGINEER

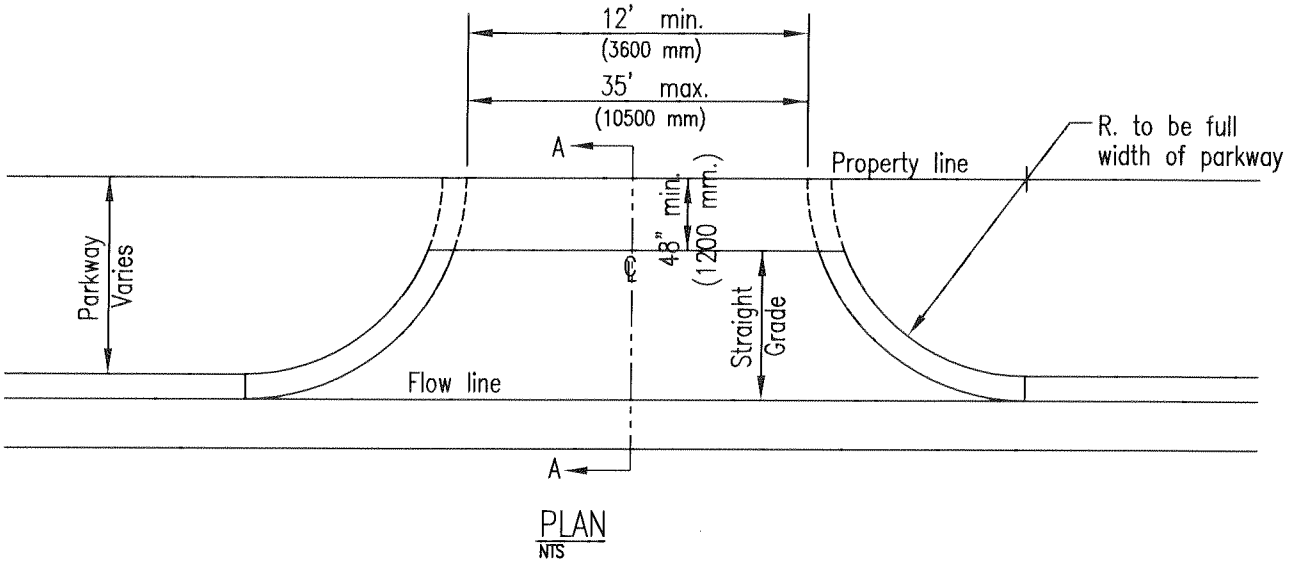
38971
RCE

DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

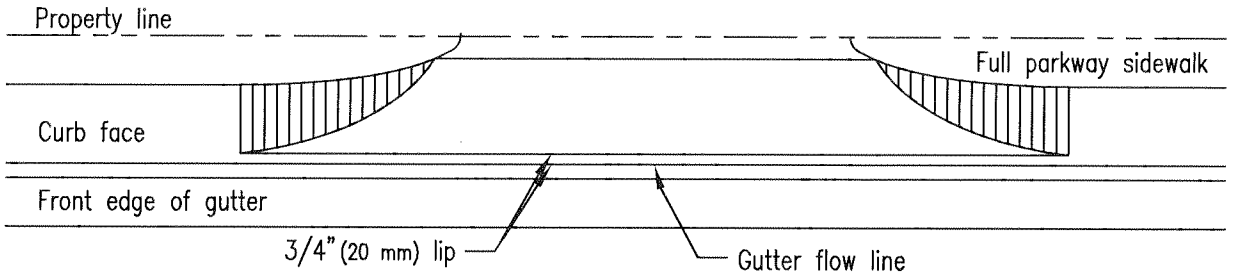
STANDARD DRAWING

801 - 2

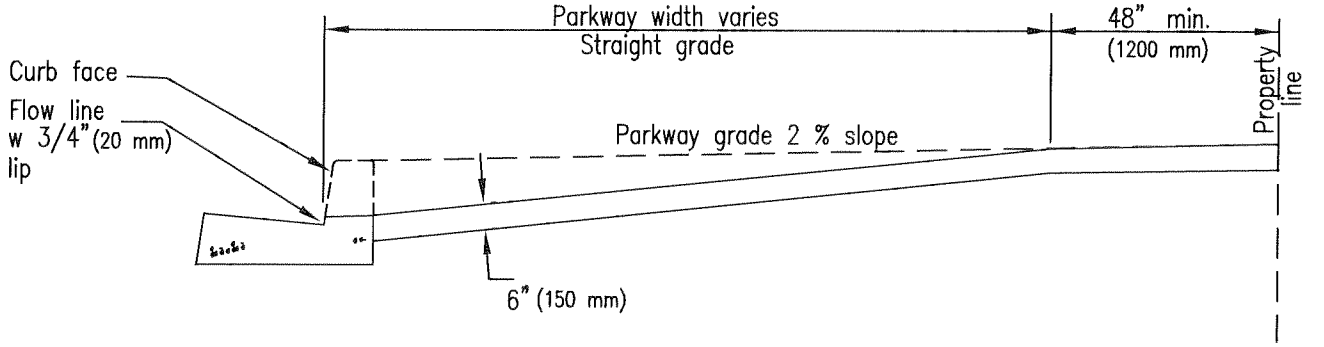
SHEET 1 OF 1



PLAN
NTS



ELEVATION
NTS



SECTION A–A
NTS

NOTE:

Concrete shall be 520–C–2500 (310–A–17), or equal.

This plan is to be used only after special permission of the City Engineer, and only in commercial areas.

Dimensions shown on this plan for English units and Metric units are not exactly equal values. If english units are used, all values used for construction shall be English units. If Metric units are used, all values used for construction shall be metric values.

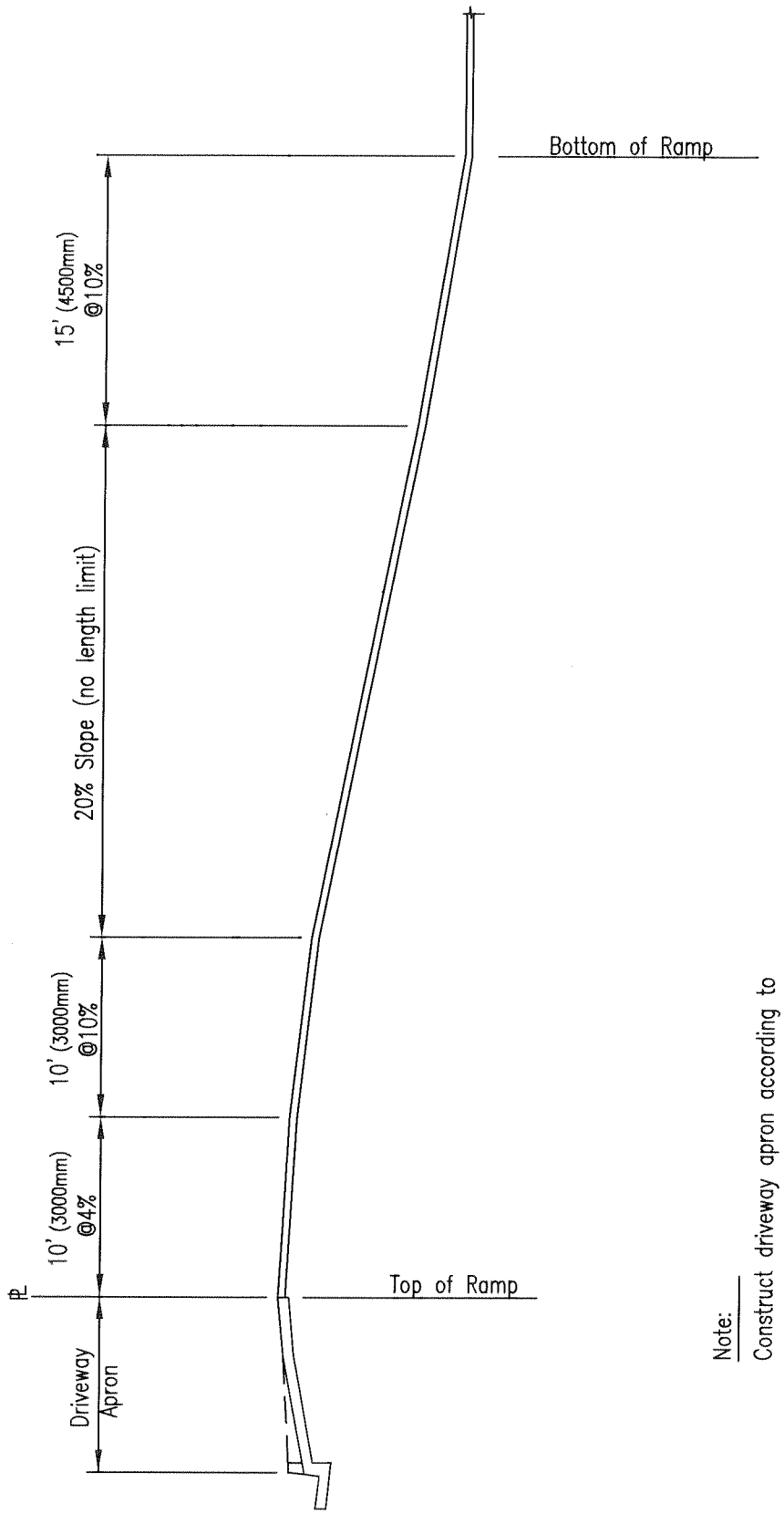
CURB-RETURN DRIVEWAY SPECIAL CASES

(Commercial Areas)

CITY OF ARCADIA

DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER	38971 RCE	STANDARD DRAWING
DATE: 12/8/03	SCALE: NONE	DRAWN BY: AG/JC
		801 - 3
		SHEET 1 OF 1



Note:
Construct driveway apron according to City's Standard Plan ARC-10-1

Reference:
Arcadia Municipal Code, Building Regulations, Section 8130.53, Subsection 3608.2.1, Driveway Ramp Requirements

Dimensions shown on this plan for English and Metric units are not exactly equal values. If English units are used, all values used for construction shall be English values. If metric units are used, all values used for construction shall be Metric values.

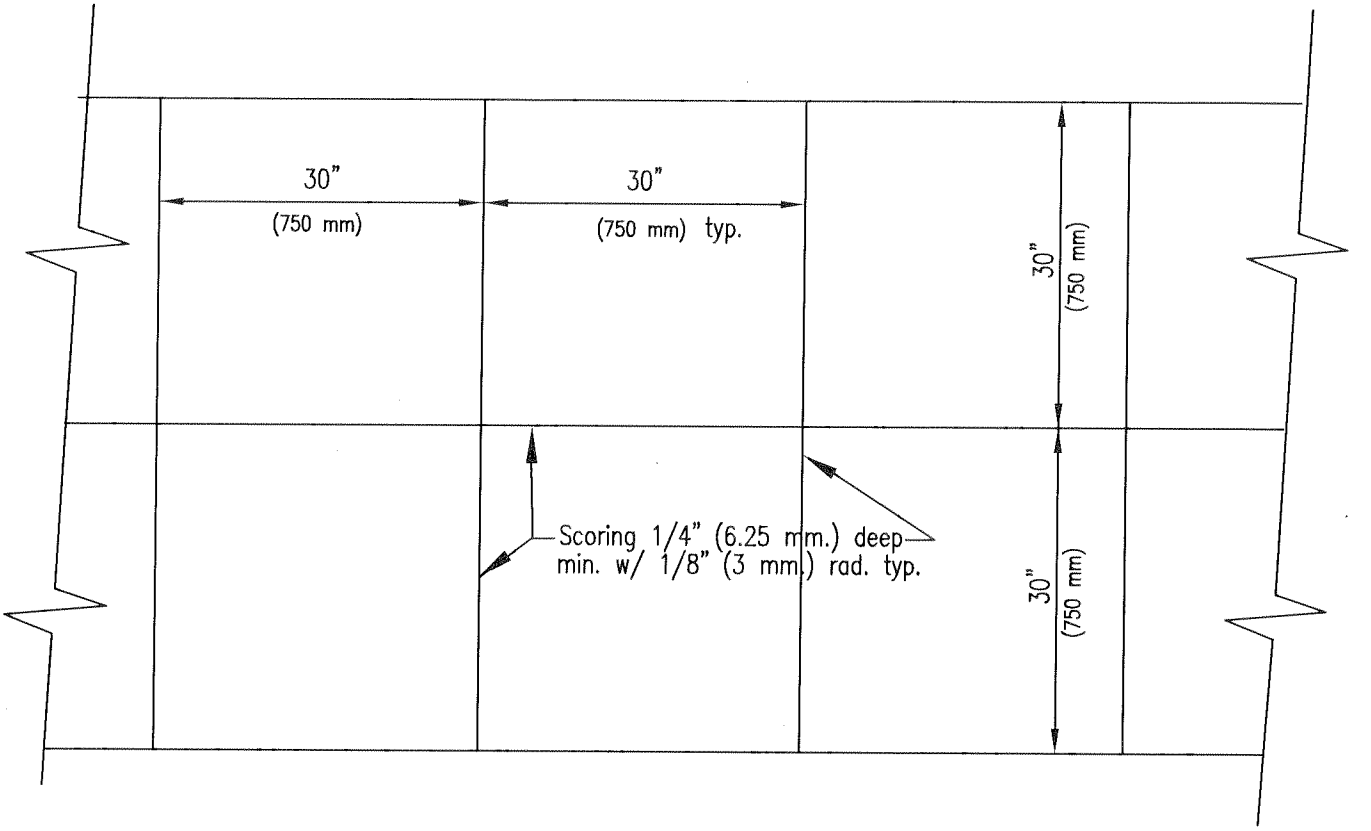
DRIVEWAY RAMP GRADES

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER | 38971 RCE

DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

STANDARD DRAWING
801 - 4
SHEET 1 OF 1



PLAN VIEW
NTS

Note:

Standard scoring for sidewalks will be 30" (750 mm.) both ways, except where existing is joined and then scoring will match existing. A 1/8" scoring tool will be used on all scoring, and a light brooom finish will be required. 1/2" (12.5 mm.) expansion joint fillers will be placed every 20' (600 mm.). Concrete shall be class 520-C- 2500 (310-C-17). The thickness of sidewalk shall be full 4" (100 mm.) placed over 90% compacted subgrade. Sidewalk in commercial areas shall be full parkway width. Where standard 5' (1500 mm.) sidewalk is constructed adjacent to back of curb in returns and joins existing back of curb sidewalk on either side, scoring will be concentric to curb return.

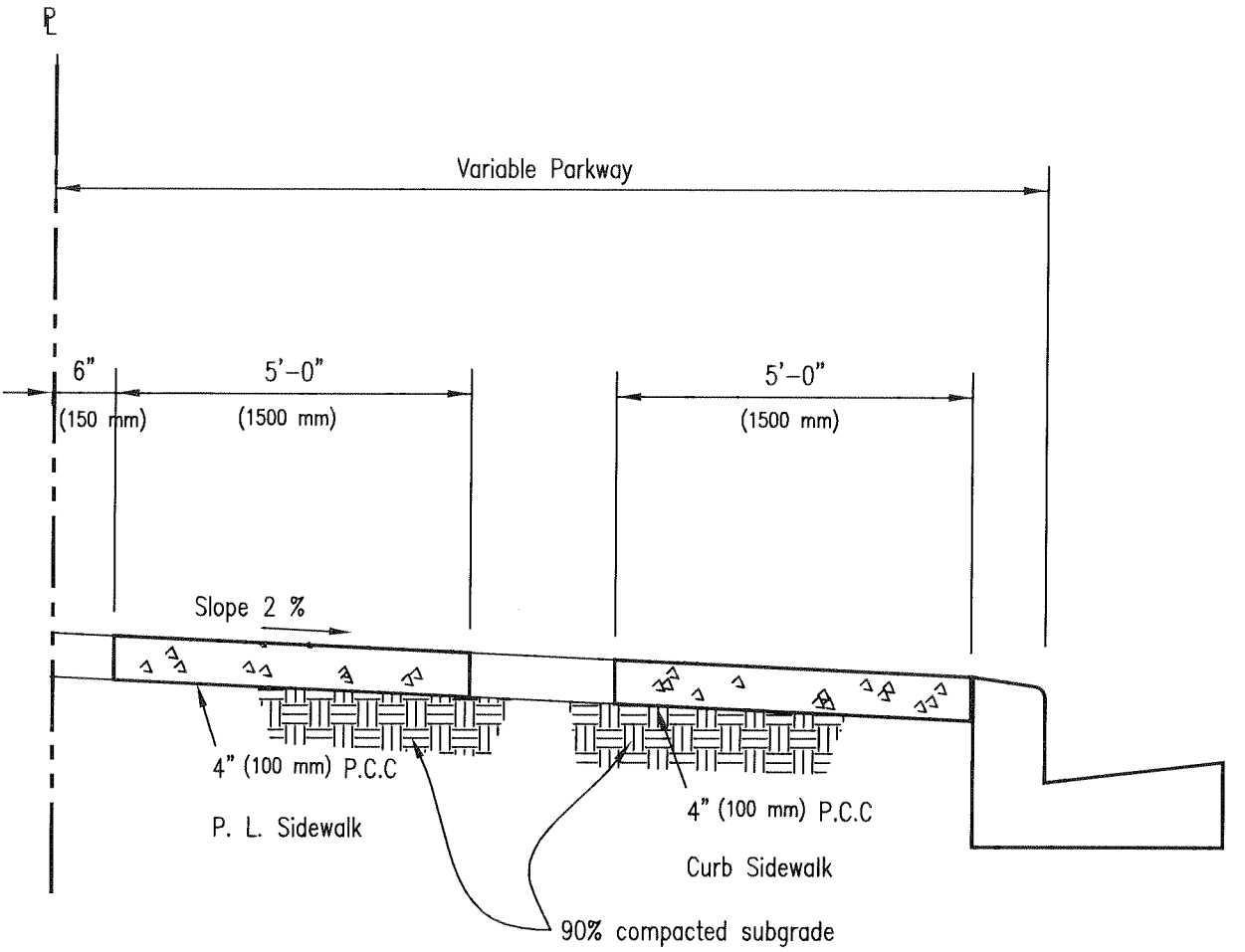
STANDARD SIDEWALK SCORING

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. - ENGINEERING DIV.

38971
CITY ENGINEER RCE

DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

STANDARD DRAWING
802 - 1
SHEET 1 OF 1



TYPICAL SIDEWALK DETAIL
NTS

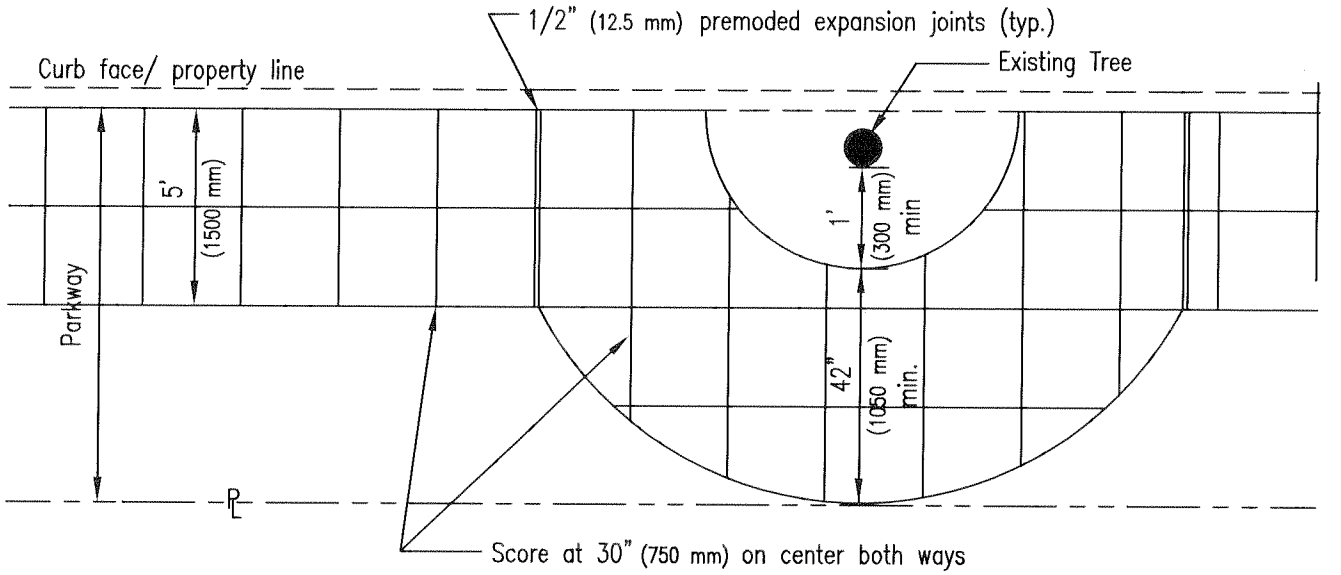
TYPICAL RESIDENTIAL SIDEWALK DETAILS

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

38971
CITY ENGINEER — RCE

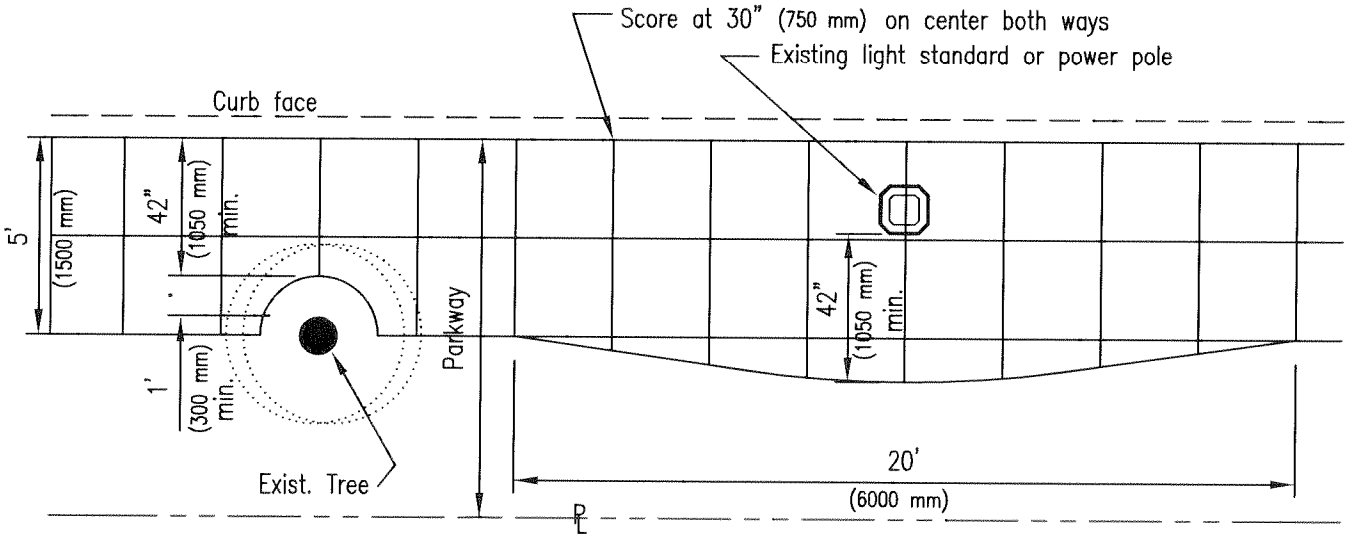
DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

STANDARD DRAWING
802 - 2
SHEET 1 OF 1



SIDEWALK PLAN AND CIRCUMVENTION OF TREES

NTS



TREE WELL AND LIGHT STANDARD

NTS

TYPICAL SIDEWALK DETIALS

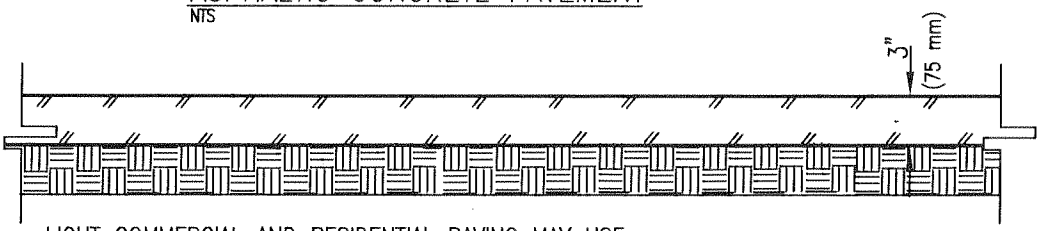
(Circumvention)

CITY OF ARCADIA

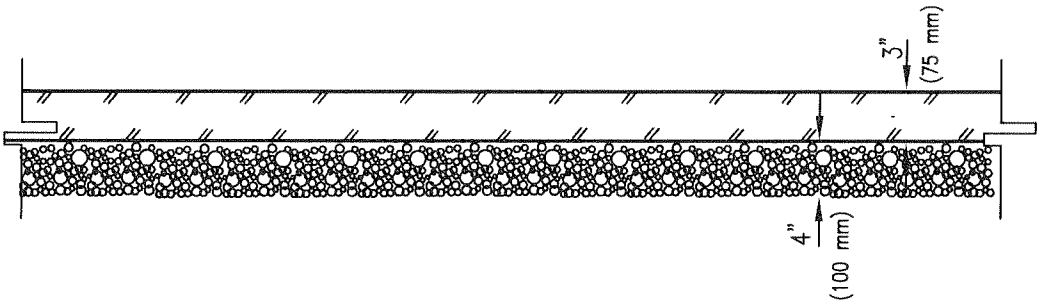
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER	38971 RCE	STANDARD DRAWING
DATE: 12/8/03	SCALE: NONE	DRAWN BY: AG/JC
		802 - 3
		SHEET 1 OF 1

ASPHALTIC CONCRETE PAVEMENT
NTS



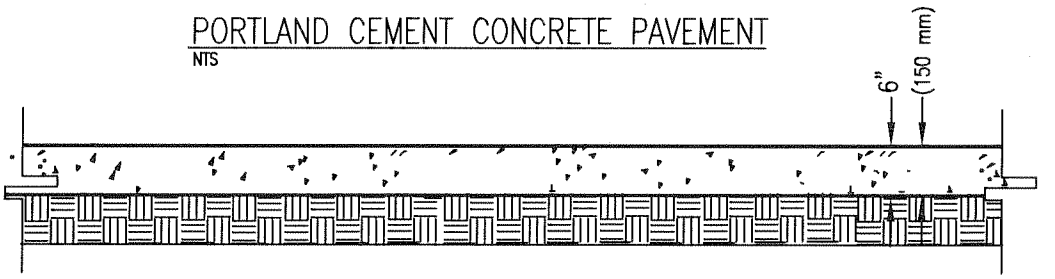
LIGHT COMMERCIAL AND RESIDENTIAL PAVING MAY USE
3" (75mm) ASPHALTIC CONCRETE OVER COMPACTED EARTH.



INDUSTRIAL PAVEMENT SHALL BE 3" (75mm) ASPHALTIC CONCRETE OVER 4" (100mm) AGGRETE BASE OR SHALL BE DESIGNED ON BASIS OF SOILS TEST DATA.

Asphaltic Concrete Pavement shall be C2-AR-4000 and shall be three inches (3") in thickness. The relative compaction of the subgrade soil shall be ninety-five percent (95%) and shall meet the compaction tests of Section 211-2 of the "Green Book".
Fair to good soil shall be compacted 4" (100mm), poor soil 5" (125mm), and very poor soil 6" (50mm).

PORTLAND CEMENT CONCRETE PAVEMENT
NTS



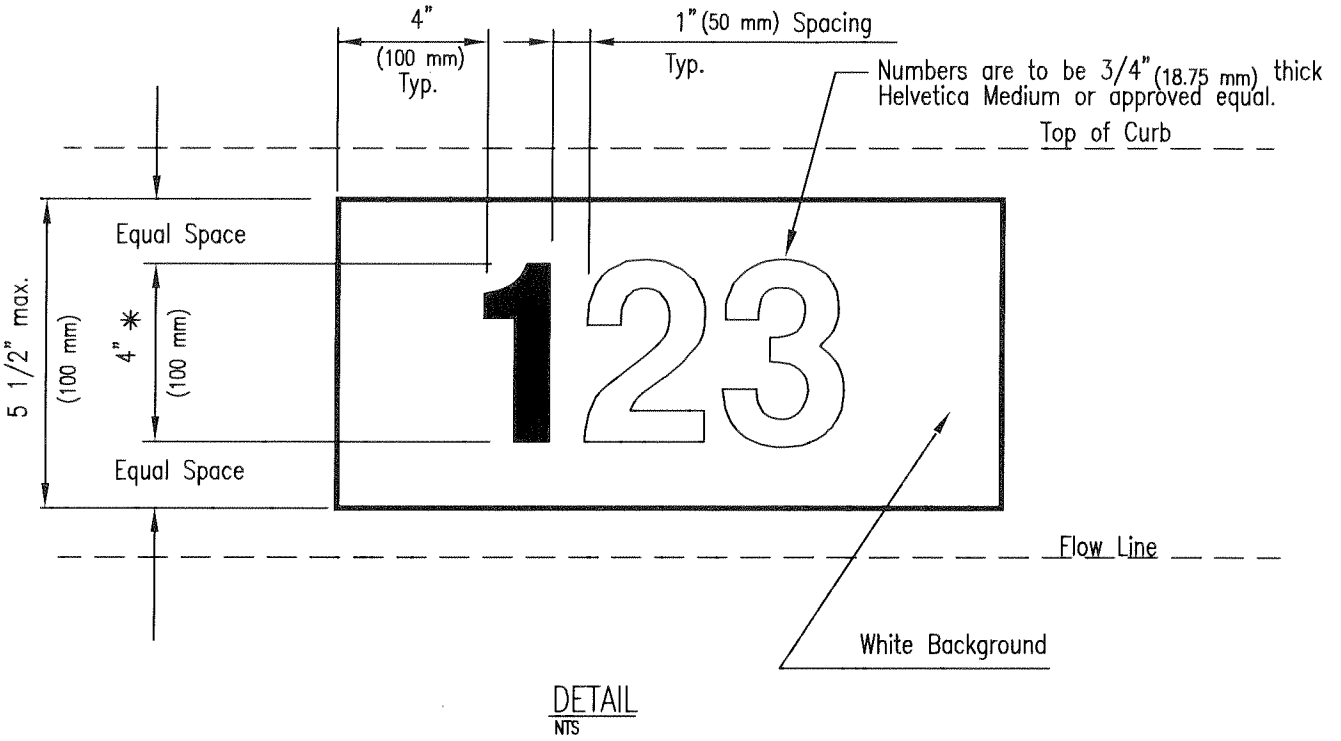
P.C.C. PAVEMENT SHALL BE 6" (150 mm) OVER COMPACTED BASE

Portland cement concrete pavement shall be class 520-C-2500 (C-310-17) and shall be 6" (150 mm) in thickness.
The relative compaction of the subgrade soil shall be ninety-five percent (95%) and shall meet the compaction tests of Section 211-2 of the "Green Book".

PARKING AREA PAVEMENT

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. - ENGINEERING DIV.

CITY ENGINEER	38971 RCE	STANDARD DRAWING
DATE: 12/8/03	SCALE: NONE	DRAWN BY: AG/JC
		803 - 1
		SHEET 1 OF 1



DETAIL
NTS

NOTES:

1. Letters and numbers are to be black paint (State Spec. Latex Traffic) and 4" (100 mm) high.

* Where curb height does not permit the use of 4" (100 mm) high letters, a smaller size shall be used, but not less than 2" (50 mm) high.

2. The background is to be white paint (State Spec. Latex Traffic), 5 1/2" (137.5 mm) high, with 70% to 90% glass bead saturation.

3. The paint and workmanship shall be the quality as to assure life expectancy and legibility of 2 years.

CURB FACE HOUSE NUMBER

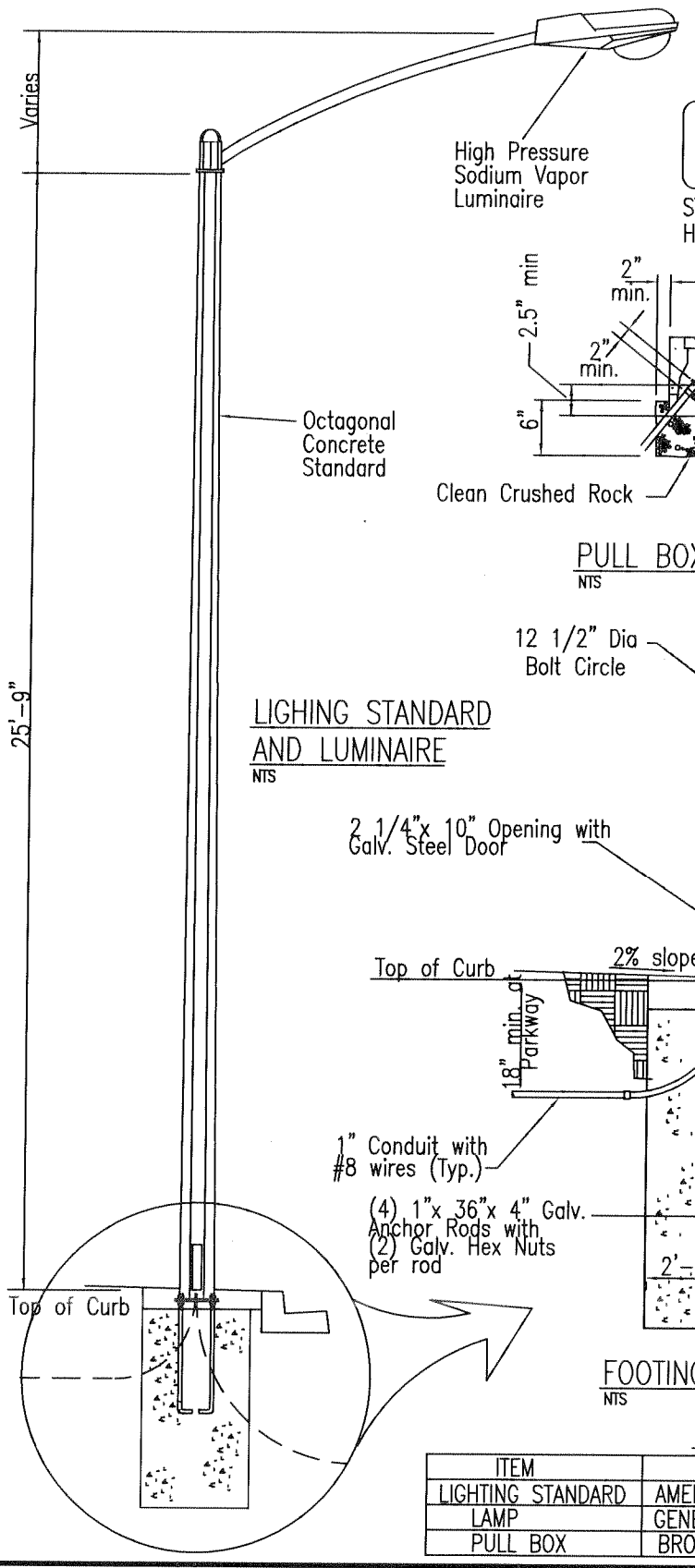
CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

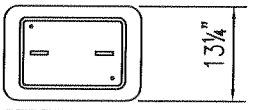
DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AG/JC

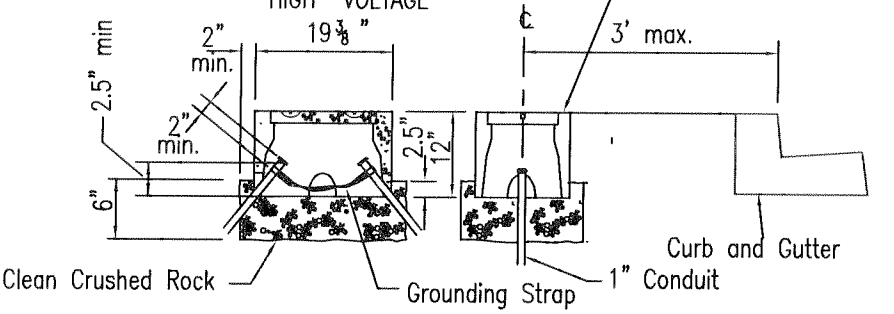
STANDARD DRAWING
804 - 1
SHEET 1 OF 1

Note:
At least 2 inches of gravel-free earth shall be placed between lighting appurtenances and exposed underground utilities in conflict with lighting appurtenances.

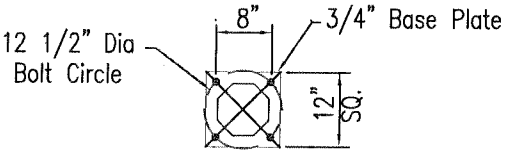


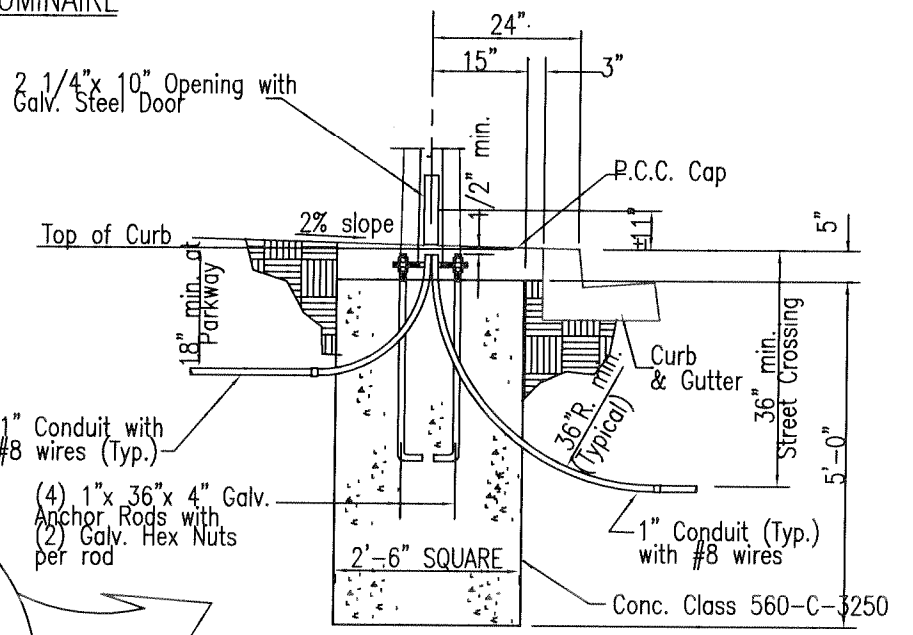
LIGHING STANDARD AND LUMINAIRE
NTS





PULL BOX- NO 3½ OR EQUAL
NTS





FOOTING DETAIL
NTS

LIGHTING SCHEDULE

ITEM	TYPE
LIGHTING STANDARD	AMERON CONCRETE OCTAGONAL POLE (ICI-ANCHOR BASE)
LAMP	GENERAL ELECTRIC
PULL BOX	BROOKS PRODUCT INC. NO. 3 1/2 OR EQUAL

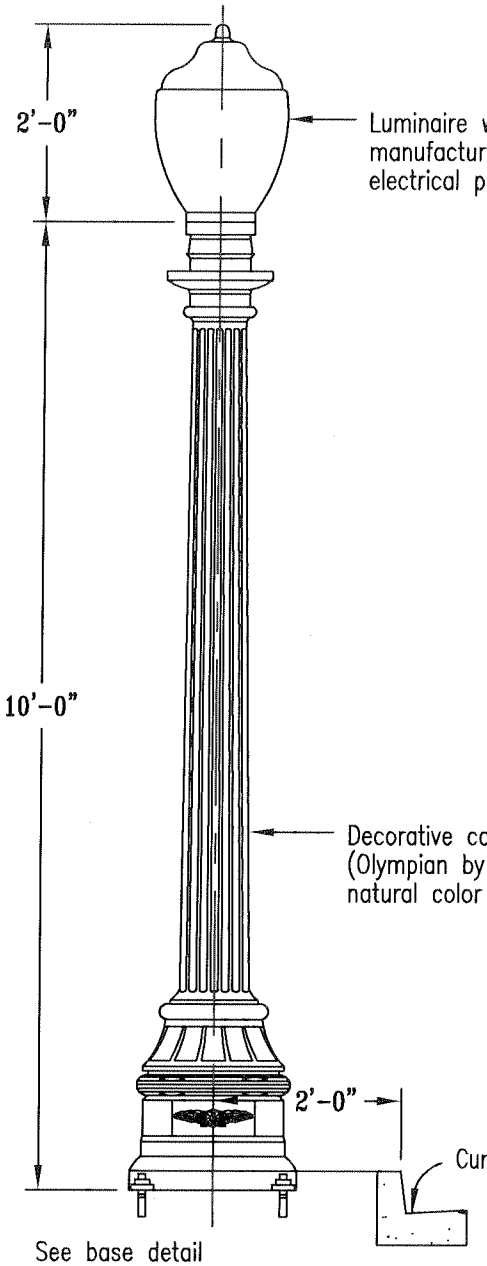
MARBELITE STREETLIGHT

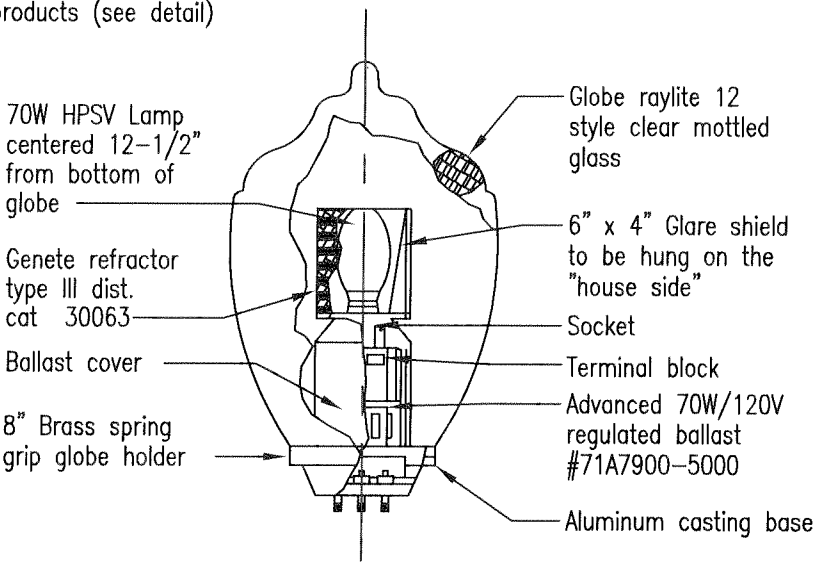
CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. - ENGINEERING DIV.

CITY ENGINEER — 38971 RCE

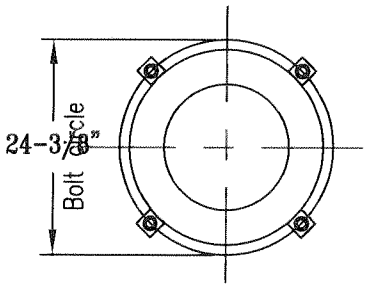
DATE: 12/8/03 | SCALE: NONE | DRAWN BY: AG/JC

STANDARD DRAWING
805 - 1
SHEET 1 OF 1

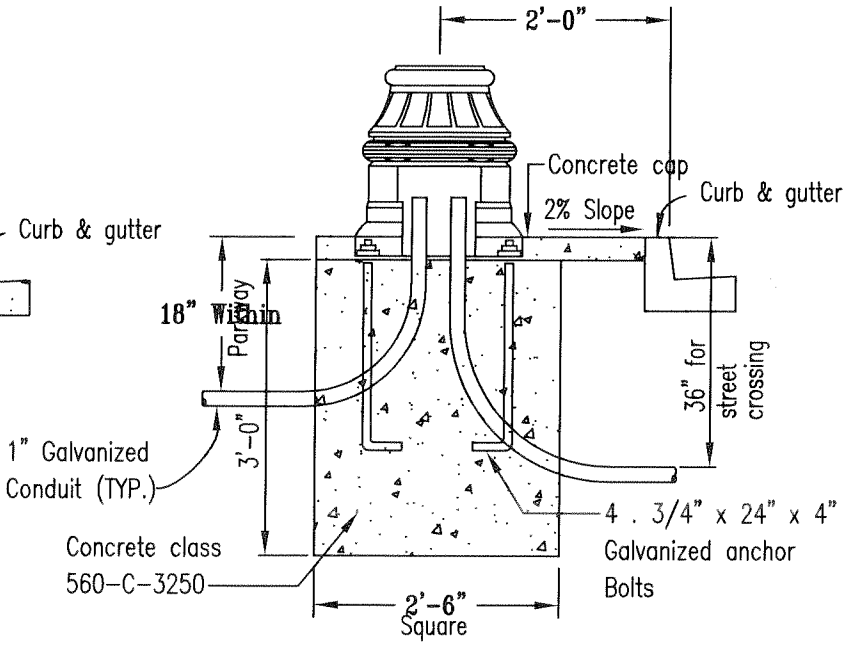




LUMINAIRE DETAIL
NTS



ELEVATION AND PLAN
NTS



BASE DETAIL
NTS

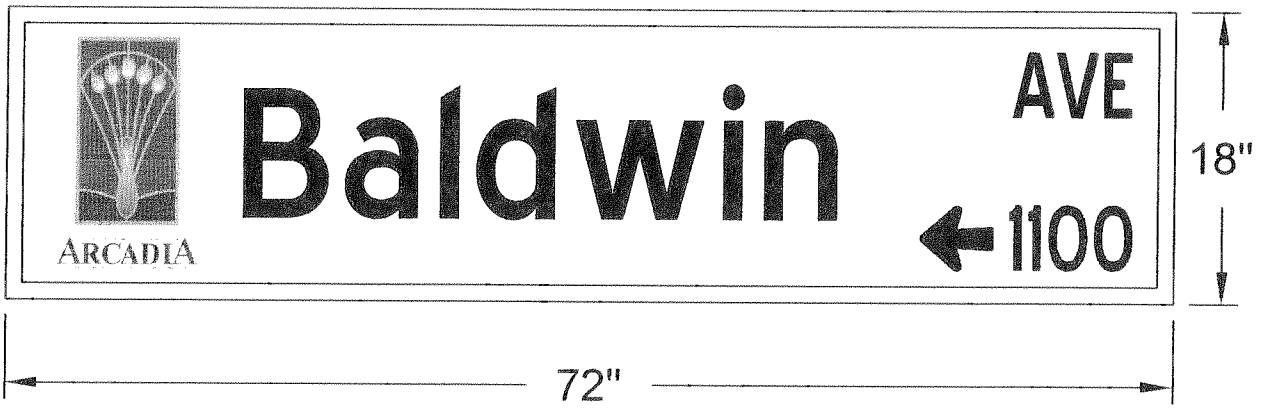
DECORATIVE RESIDENTIAL STREETLIGHT

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

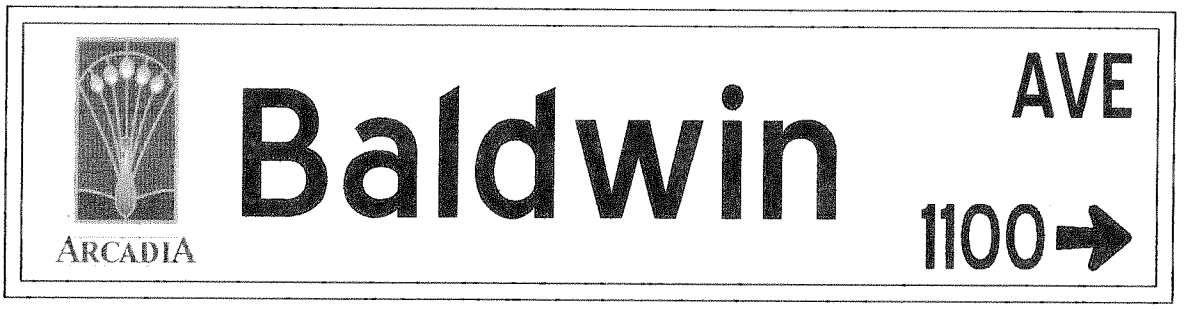
CITY ENGINEER — 38971 RCE

DATE:	SCALE:	DRAWN BY:
12/8/03	NONE	AD

STANDARD DRAWING
805 - 2
SHEET 1 OF 1



FRONT



BACK

NOTES

1. LETTER STYLE SHALL BE "STANDARD HIGHWAY C SERIES", 8" UPPER/LOWER CASE.
2. THE MINIMUM LETTER SIZE FOR THE PRINCIPAL LEGEND SHALL BE 4".
3. THE SPECIFICATION FOR THE BACKGROUND COLOR IS AVAILABLE FROM PUBLIC WORKS SERVICES; LETTER COLOR SHALL BE REFLECTORIZED WHITE.
4. THE SIGN SHALL BE CONSTRUCTED OF .080 GAUGE ALUMINUM PER THE NOTED DIMENSIONS.
5. A DIGITAL FILE OF THE CITY LOGO IS AVAILABLE FROM PUBLIC WORKS SERVICES DEPARTMENT OR THE DEVELOPMENT SERVICES DEPARTMENT, ENGINEERING DIVISION.

STREET NAME SIGN MAST ARM MOUNTED

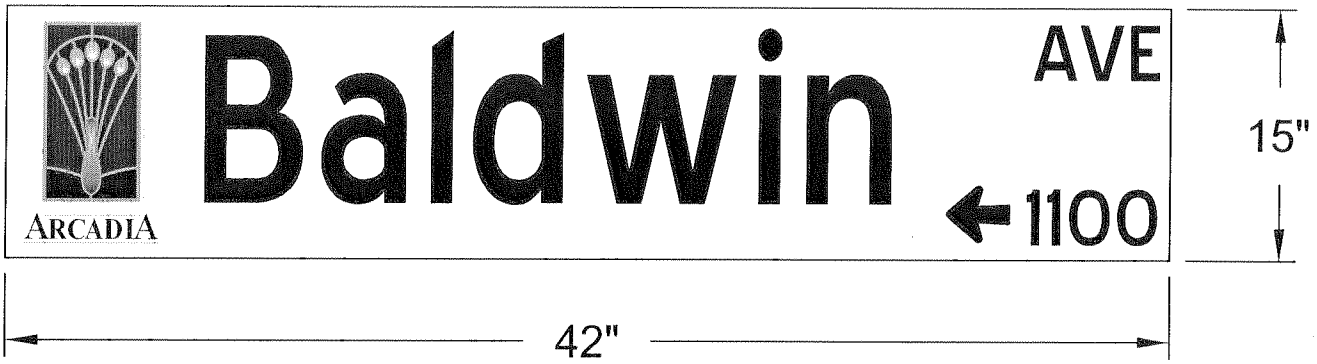
CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

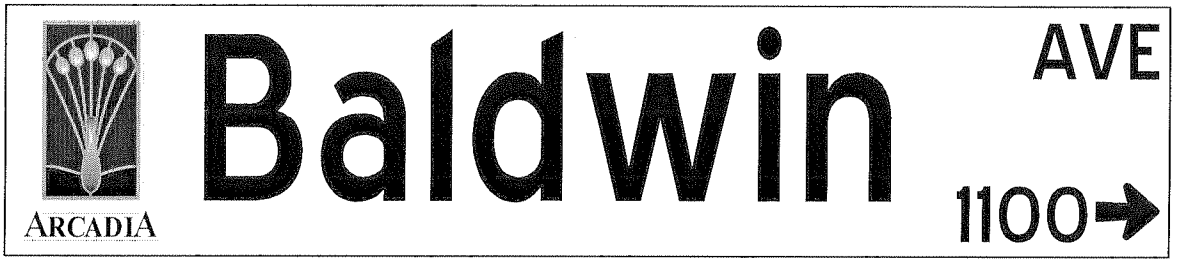
38971
CITY ENGINEER RCE

DATE:	SCALE:	DRAWN BY:
12/08/03	NONE	RSG

STANDARD DRAWING
807-1
SHEET 1 OF 1



FRONT



BACK

NOTES

1. LETTER STYLE SHALL BE "STANDARD HIGHWAY C SERIES", 6" UPPER/LOWER CASE.
2. THE MINIMUM LETTER SIZE FOR THE PRINCIPAL LEGEND SHALL BE 4".
3. THE SPECIFICATION FOR THE BACKGROUND COLOR IS AVAILABLE FROM PUBLIC WORKS SERVICES; LETTER COLOR SHALL BE REFLECTORIZED WHITE.
4. THE SIGN SHALL BE CONSTRUCTED OF .080 GAUGE TUBULAR ALUMINUM PER THE NOTED DIMENSIONS.
5. A DIGITAL FILE OF THE CITY LOGO IS AVAILABLE FROM PUBLIC WORKS SERVICES DEPARTMENT OR THE DEVELOPMENT SERVICES DEPARTMENT, ENGINEERING DIVISION.

STREET NAME SIGN POLE TOP MOUNTED

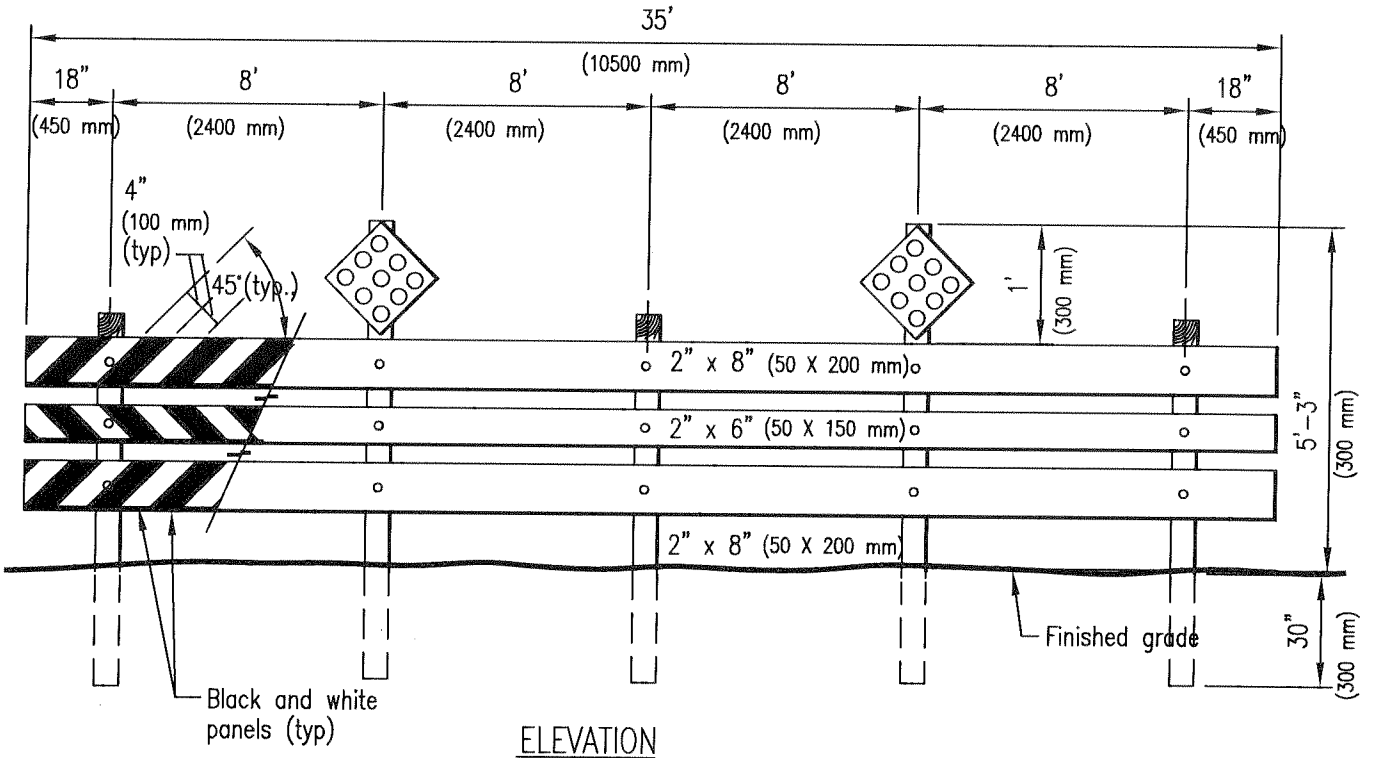
CITY OF ARCADIA

DEVELOPMENT SERVICES DEPARTMENT – ENGINEERING DIVISION

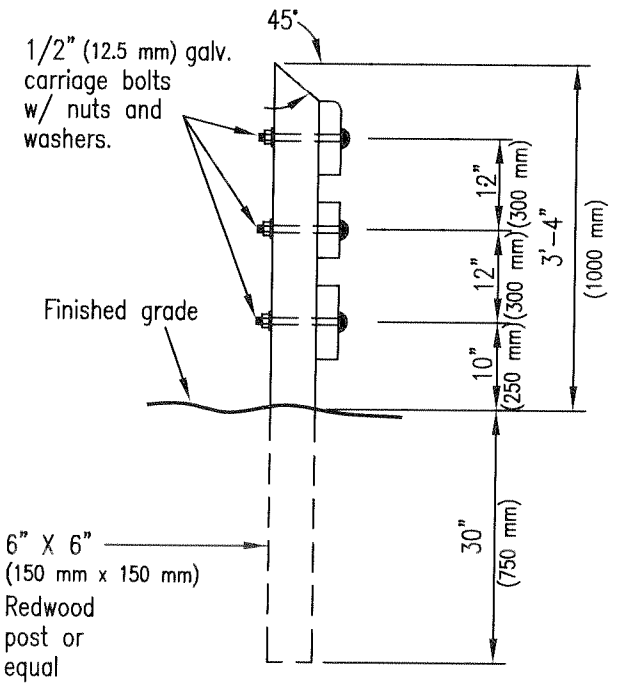
38971
CITY ENGINEER RCE

DATE:	SCALE:	DRAWN BY:	STANDARD DRAWING
12/08/03	NONE	RSG	807-2

SHEET 1 OF 1



ELEVATION
NTS



SECTION
NTS

NOTES:

All vertical posts are 6" x 6" (150 mm x 150 mm) redwood, painted w/ 3 coats of white enamel. Vertical posts mounting the W21R reflectors to be 1' (300 mm) longer than the other posts. Holes for carriage bolts to be drilled same size as bolts. Horizontal guardrails to be 2" x 6" (50 mm x 150 mm), 2" x 8" (50 mm x 200 mm), and 2" x 6" (50 mm x 150 mm) redwood painted w/ 3 coats of white enamel, with 4" (100 mm) black diagnal panel as shown above. Center vertical post of guard panel to be set a min of 5' (1500 mm) back of curb face.

GUARD PANEL

CITY OF ARCADIA
DEVELOPMENT SERVICES DEPT. – ENGINEERING DIV.

38971
CITY ENGINEER RCE

DATE: 12/8/03 | SCALE: NONE | DRAWN BY: AG

STANDARD DRAWING
808 - 1

SHEET 1 OF 1